

# **A1-F18AC-760-200**

**1 JULY 2002**

**Change 1 – 15 February 2003**

---

## **TECHNICAL MANUAL**

### **ORGANIZATIONAL MAINTENANCE TESTING AND TROUBLESHOOTING**

# **TACTICAL ELECTRONIC WARFARE SYSTEMS**

**NAVY MODEL  
F/A-18A AND F/A-18B  
161353 AND UP**

N68936-01-D-0007

**This change incorporates IRAC 1.**

**This manual is incomplete without classified supplement A1-F18AC-760-210/(C).**

DISTRIBUTION STATEMENT C. Distribution authorized to U.S. Government agencies and their contractors to protect publications required for official use or for administrative or operational purposes only, determined on 1 March 1988. Other requests for this document shall be referred to Commanding Officer, Naval Air Technical Data and Engineering Service Command, Naval Air Station North Island, P.O. Box 357031, Building 90 Distribution, San Diego, CA 92135-7031.

DESTRUCTION NOTICE. For unclassified, limited documents, destroy by any method that will prevent disclosure of contents or reconstruction of the document.

**PUBLISHED BY DIRECTION OF THE COMMANDER, NAVAL AIR SYSTEMS COMMAND**

---

0801LP1022747

**NATEC ELECTRONIC MANUAL**

## NUMERICAL INDEX OF EFFECTIVE WORK PACKAGES/PAGES

### List of Current Changes

Original 0 ..... 1 Jul 02      Change 1 ..... 15 Feb 03  
Including IRAC 1

Only those work packages/pages assigned to the manual are listed in this index. Insert Change 1 , dated 15 February 2003 . Dispose of superseded work packages/pages. Superseded classified work packages/pages shall be destroyed in accordance with applicable security regulations. If changed pages are issued to a work package, insert the changed pages in the applicable work package. The portion of text affected in a change or revision is indicated by change bars or the change symbol “R” in the outer margin of each column of text. Changes to illustrations are indicated by pointing hands, change bars, or MAJOR CHANGE symbols. Changes to diagrams may be indicated by shaded borders.

WP Number	Title	WP Number	Title
Title		018 00	Testing - Waveguide Pressurization Test, Countermeasures Set
Page A	Numerical Index of Effective Work Packages/Pages	019 00	Troubleshooting - Waveguide Pressurization Test, Countermeasures Set
TPDR-1	List of Technical Publications Deficiency Reports Incorporated	020 00	Testing - Line/Antenna Return Loss and Insertion Loss, Tactical Electronic Warfare
001 00	Alphabetical Index	021 00	Testing - AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss - Low Band, Countermeasures Set
002 00	Introduction	022 00	Testing - AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss - Mid Band, Countermeasures Set
003 00	Testing - Built-In Test, Interference Blanker System	023 00	Testing - AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss - High Band, Countermeasures Set
004 00	Locator, Interference Blanker System	024 00	Locator - Antenna System, Countermeasures Set
005 00	Troubleshooting - Built-In Test, Interference Blanker System	025 00	Testing - Functional Test, Countermeasures Set
006 00	Testing - Functional Test, Countermeasures Dispensing System	026 00	T1 - Techniques Test, Countermeasures Set
006 01	Testing - Functional Test Using AN/ALM-70A Test Set, Countermeasures Dispensing System	027 00	T3 System Sweep Test, Countermeasures Set
006 02	Testing - Functional Test Using AN/ALM-225 Test Set, Countermeasures Dispensing System	028 00	T3A Lines and Antenna Sweep Test, Countermeasures Set
007 00	Testing - Functional Test Equipment Hookup, Countermeasures Dispensing System	029 00	T4 Narrow Band Power Test, Countermeasures Set
008 00	Locator, Countermeasures Dispensing System	030 00	T5 Receiver Sensitivity/Snapdown, Countermeasures Set
009 00	Troubleshooting - Functional Test Part 1 Using AN/ALM-70A Test Set, Countermeasures Dispensing System	031 00	Testing - Built-In Test, Countermeasures Warning and Control System
009 01	Troubleshooting - Functional Test Part 1 Using AN/ALM-225 Test Set, Countermeasures Dispensing System	032 00	Locator, Countermeasures Warning and Control System
010 00	Troubleshooting - Functional Test Part 2 Using AN/ALM-70A Test Set, Countermeasures Dispensing System	033 00	Troubleshooting - Built-In Test Part 1, Countermeasures Warning and Control System
010 01	Troubleshooting - Functional Test Part 2 Using AN/USM-225 Test Set, Countermeasures Dispensing System	034 00	Troubleshooting - Built-In Test Part 2, Countermeasures Warning and Control System
011 00	Troubleshooting - Functional Test Part 3 Using AN/ALM-70A Test Set, Countermeasures Dispensing System	035 00	Troubleshooting - Built-In Test Part 3, Countermeasures Warning and Control System
011 01	Troubleshooting - Functional Test Part 3 Using AN/USM-225 Test Set, Countermeasures Dispensing System	036 00	Troubleshooting - Built-In Test Part 4, Countermeasures Warning and Control System
012 00	Troubleshooting - Functional Test Part 4 Using AN/ALM-70A Test Set, Countermeasures Dispensing System	037 00	Troubleshooting - Built-In Test Part 5, Countermeasures Warning and Control System
012 01	Troubleshooting - Functional Test Part 4 Using AN/ALM-225 Test Set, Countermeasures Dispensing System	038 00	Troubleshooting - Built-In Test Part 6, Countermeasures Warning and Control System
013 00	Troubleshooting - Functional Test Part 5 Using AN/ALM-70A Test Set, Countermeasures Dispensing System	039 00	Testing - Line/Antenna Return Loss and Insertion Loss, Countermeasures Warning and Control System
013 01	Troubleshooting - Functional Test Part 5 Using AN/ALM-225 Test Set, Countermeasures Dispensing System	039 01	Testing - Rear High Band RF Line/Antenna Insertion Loss and Return Loss, Countermeasures Warning and Control System
014 00	Testing - Built-In Test, Countermeasures Set	039 02	Testing - Rear Local Oscillator Line Insertion Loss, Countermeasures Warning and Control System
015 00	Locator, Countermeasures Set	039 03	Testing - Rear High Band IF Line Insertion Loss, Countermeasures Warning and Control System
016 00	Troubleshooting - Built-In Test Part 1, Countermeasures Set	039 04	Testing - Forward High Band IF Line Insertion Loss, Countermeasures Warning and Control System
017 00	Troubleshooting - Built-In Test Part 2, Countermeasures Set	039 05	Testing - Forward Local Oscillator Line Insertion Loss, Countermeasures Warning and Control System
		039 06	Testing - Forward High Band RF Line/Antenna Insertion Loss and Return Loss, Countermeasures Warning and Control System
		039 07	Testing - Low Band RF Line Insertion Loss, Countermeasures Warning and Control System

## NUMERICAL INDEX OF EFFECTIVE WORK PACKAGES/PAGES (Continued)

Total number of pages in this manual is 634 consisting of the following:

WP/Page Number	Change Number	WP/Page Number	Change Number	WP/Page Number	Change Number	WP/Page Number	Change Number
Title . . . . .	1	010 01		022 00		036 00	
A - B . . . . .	1	1 - 15 . . . . .	0	1 - 14 . . . . .	0	1 - 10 . . . . .	0
C Blank . . . . .	1	16 Blank . . . . .	0	023 00		037 00	
TPDR-1 . . . . .	0	011 00		1 - 16 . . . . .	0	1 - 11 . . . . .	0
TPDR-2 Blank . . . . .	0	1 - 16 . . . . .	0	024 00		12 Blank . . . . .	0
001 00		011 01		1 - 13 . . . . .	0	038 00	
1 - 2 . . . . .	0	1 - 15 . . . . .	0	14 Blank . . . . .	0	1 - 11 . . . . .	0
002 00		16 Blank . . . . .	0	025 00		12 Blank . . . . .	0
1 - 7 . . . . .	1	012 00		1 - 14 . . . . .	0	039 00	
8 Blank . . . . .	1	1 - 13 . . . . .	0	026 00		1 - 2 . . . . .	0
003 00		14 Blank . . . . .	0	1 - 7 . . . . .	0	039 01	
1 - 5 . . . . .	0	012 01		8 Blank . . . . .	0	1 - 17 . . . . .	0
6 Blank . . . . .	0	1 - 23 . . . . .	0	027 00		18 Blank . . . . .	0
004 00		24 Blank . . . . .	0	1 - 10 . . . . .	0	039 02	
1 - 8 . . . . .	0	013 00		028 00		1 - 14 . . . . .	0
005 00		1 - 18 . . . . .	0	1 - 19 . . . . .	0	039 03	
1 - 6 . . . . .	0	013 01		20 Blank . . . . .	0	1 - 9 . . . . .	0
006 00		1 - 15 . . . . .	0	029 00		10 Blank . . . . .	0
1 . . . . .	0	16 Blank . . . . .	0	1 - 14 . . . . .	0	039 04	
2 Blank . . . . .	0	014 00		030 00		1 - 6 . . . . .	0
006 01		1 - 4 . . . . .	0	1 - 6 . . . . .	0	039 05	
1 - 9 . . . . .	0	015 00		031 00		1 - 13 . . . . .	0
10 Blank . . . . .	0	1 - 12 . . . . .	0	1 . . . . .	1	14 Blank . . . . .	0
006 02		016 00		2 - 3 . . . . .	0	039 06	
1 - 10 . . . . .	0	1 - 8 . . . . .	0	4 . . . . .	1	1 - 17 . . . . .	0
007 00		017 00		5 - 17 . . . . .	0	18 Blank . . . . .	0
1 - 2 . . . . .	0	1 - 8 . . . . .	0	18 Blank . . . . .	0	039 07	
008 00		018 00		032 00		1 - 8 . . . . .	0
1 - 9 . . . . .	0	1 - 6 . . . . .	0	1 - 16 . . . . .	0		
10 Blank . . . . .	0	019 00		033 00			
009 00		1 - 12 . . . . .	0	1 - 13 . . . . .	0		
1 - 14 . . . . .	0	020 00		14 Blank . . . . .	0		
009 01		1 - 23 . . . . .	0	034 00			
1 - 14 . . . . .	0	24 Blank . . . . .	0	1 - 14 . . . . .	0		
010 00		021 00		035 00			
1 - 14 . . . . .	0	1 - 14 . . . . .	0	1 - 11 . . . . .	0		
				12 Blank . . . . .	0		

**THIS PAGE INTENTIONALLY LEFT BLANK.**



---

**LIST OF TECHNICAL PUBLICATION DEFICIENCY REPORTS INCORPORATED****ORGANIZATIONAL MAINTENANCE****TESTING AND TROUBLESHOOTING****TACTICAL ELECTRONIC WARFARE SYSTEMS**

---

1. The TPDRs listed below have been incorporated in this issue.

<b>IDENTIFICATION NUMBER/ QA SEQUENCE NUMBER</b>	<b>LOCATION</b>
55257-00-0001	WP012 01, pg. 13

**THIS PAGE INTENTIONALLY LEFT BLANK.**

---

**ALPHABETICAL INDEX**  
**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TACTICAL ELECTRONIC WARFARE SYSTEMS**

---

<b>Title</b>	<b>WP Number</b>
Countermeasures Dispensing System	
Locator .....	008 00
Testing - Functional Test .....	006 00
Testing - Functional Test Equipment Hookup .....	007 00
Troubleshooting - Functional Test Part 1 Using AN/ALM-70A Test Set .....	009 00
Troubleshooting - Functional Test Part 1 Using AN/ALM-225 Test Set .....	009 01
Troubleshooting - Functional Test Part 2 Using AN/ALM-70A Test Set .....	010 00
Troubleshooting - Functional Test Part 2 Using AN/ALM-225 Test Set .....	010 01
Troubleshooting - Functional Test Part 3 Using AN/ALM-70A Test Set .....	011 00
Troubleshooting - Functional Test Part 3 Using AN/ALM-225 Test Set .....	011 01
Troubleshooting - Functional Test Part 4 Using AN/ALM-70A Test Set .....	012 00
Troubleshooting - Functional Test Part 4 Using AN/ALM-225 Test Set .....	012 01
Troubleshooting - Functional Test Part 5 Using AN/ALM-70A Test Set .....	013 00
Troubleshooting - Functional Test Part 5 Using AN/ALM-225 Test Set .....	013 01
Countermeasures Set	
Testing - Functional Test .....	025 00
Locator .....	015 00
Locator - Antenna System .....	024 00
Testing - Line/Antenna Return Loss and Insertion Loss .....	020 00
Testing - AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss - High Band .....	023 00
Testing - AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss - Low Band .....	021 00
Testing - AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss - Mid Band .....	022 00
Testing - Built-In Test .....	014 00
Testing - Waveguide Pressurization Test .....	018 00
Troubleshooting - Built-In Test Part 1 .....	016 00
Troubleshooting - Built-In Test Part 2 .....	017 00
Troubleshooting - Waveguide Pressurization Test .....	019 00
T1 - Techniques Test .....	026 00
T3 System Sweep Test .....	027 00
T3A Lines and Antenna Sweep Test .....	028 00
T4 Narrow Band Power Test .....	029 00
T5 Receiver Sensitivity/Snapdown .....	030 00
Countermeasures Warning and Control System	
Testing - Built-In Test .....	031 00
Locator .....	032 00
Testing - Forward High Band IF Line Insertion Loss .....	039 04
Testing - Forward High Band RF Line/Antenna Insertion Loss and Return Loss .....	039 06
Testing - Forward Local Oscillator Line Insertion Loss .....	039 05
Testing - Line/Antenna Return Loss and Insertion Loss .....	039 00
Testing - Low Band RF Line Insertion Loss .....	039 07
Testing - Rear High Band IF Line Insertion Loss .....	039 03
Testing - Rear High Band RF Line/Antenna Insertion Loss and Return Loss .....	039 01

<b>Title</b>	<b>WP Number</b>
Countermeasures Warning and Control System (Continued)	
Testing - Rear Local Oscillator Line Insertion Loss .....	039 02
Troubleshooting - Built-In Test Part 1 .....	033 00
Troubleshooting - Built-In Test Part 2 .....	034 00
Troubleshooting - Built-In Test Part 3 .....	035 00
Troubleshooting - Built-In Test Part 4 .....	036 00
Troubleshooting - Built-In Test Part 5 .....	037 00
Troubleshooting - Built-In Test Part 6 .....	038 00
Interference Blanker System	
Locator .....	004 00
Testing - Built-In Test .....	003 00
Troubleshooting - Built-In Test .....	005 00
Introduction .....	002 00
Diagrams .....	002 00
Effectivities .....	002 00
Illustrated Parts Breakdown .....	002 00
Manual Issue Date .....	002 00
Navy (AN) Standard/Common Name Nomenclature .....	002 00
Purpose .....	002 00
Quality Assurance Procedures .....	002 00
Record of Applicable Technical Directives .....	002 00
Requisitioning and Distribution of NAVAIR Technical Publications .....	002 00
Technical Directives .....	002 00
Technical Publications Deficiency Report (TPDR) .....	002 00
Test Procedures .....	002 00
Troubleshooting .....	002 00

## INTRODUCTION

## ORGANIZATIONAL MAINTENANCE

## TESTING AND TROUBLESHOOTING

## TACTICAL ELECTRONIC WARFARE SYSTEM

This WP supersedes WP 002 00 dated, 1 July 2002.

1. **PURPOSE.**

2. This manual provides the data required by the technician to do testing and troubleshooting of the system.

the aircraft or software program to which the data applies. If no effectivity note appears on the work package title page, the work package has the same effectivity as shown on the manual title page. The effectivity notes may use:

3. **REQUISITION AND AUTOMATIC DISTRIBUTION OF NAVAIR TECHNICAL MANUALS.**

4. Procedures to be used by Naval activities and other Department of Defense activities requiring NAVAIR technical manuals are defined in NAVAIR 00-25-100.

**NOTE**

Aircraft with model designator F/A-18B are the same type and model as TF/A-18A.

5. **MANUAL ISSUE DATE.**

6. The date on the title page is the copy freeze date. No additions, deletions, or changes are made after the manual issue date except last minute safety of flight or required maintenance changes. Data collected after the manual issue date will be included in later changes or revisions of the manual.

a. Type, model, and series

b. Bureau number (tail number)

c. Combination of type, model, series, and bureau numbers

d. Part number or serial number

e. Technical directive number

f. Configuration/identification number

7. **EFFECTIVITIES.**

8. Effectivity notes on manual title pages, work package title pages, and within a work package indicate

9. The table below shows examples of effectivity notes and their meanings:

Effectivity Note Examples

Effectivity Note	Definition
160777 AND UP	Applicable to all F/A-18A, F/A-18B, F/A-18C and F/A-18D for bureau numbers listed.
F/A-18A, F/A-18B	Applicable to all F/A-18A and F/A-18B.
F/A-18C, F/A-18D	Applicable to all F/A-18C and F/A-18D.
F/A-18A	Applicable to all F/A-18A, but not F/A-18B, F/A-18C and F/A-18D.
F/A-18B	Applicable to all F/A-18B, but not F/A-18A, F/A-18C, and F/A-18D.

## Effectivity Note Examples (Continued)

Effectivity Note	Definition
F/A-18C	Applicable to all F/A-18C, but not F/A-18A, F/A-18B, and F/A-18D.
F/A-18D	Applicable to all F/A-18D, but not F/A-18A, F/A-18B, and F/A-18C.
F/A-18A, F/A-18C	Applicable to all F/A-18A and F/A-18C, but not to F/A-18B and F/A-18D.
F/A-18B, F/A-18D	Applicable to all F/A-18B and F/A-18D, but not to F/A-18A and F/A-18C.
F/A-18A 160775, 160777 THRU 160782	Only applicable to some bureau numbers of F/A-18A. Not applicable to any F/A-18B, even if an F/A-18B bureau number is within the numbers listed.
F/A-18C 163427, 163430 THRU 163456	Only applicable to some bureau numbers of F/A-18C. Not applicable to any F/A-18D, even if an F/A-18D bureau number is within the numbers listed.
F/A-18B 160784 AND UP	Only applicable to some bureau numbers of F/A-18B. Not applicable to any F/A-18A, even if an F/A-18A bureau number is within the numbers listed.
F/A-18D 163434 THRU 163457	Only applicable to some bureau numbers of F/A-18D. Not applicable to any F/A-18C, even if an F/A-18C bureau number is within the numbers listed.
160775 THRU 160785 BEFORE F/A-18 AFC 772	Applicable to F/A-18A and F/A-18B for bureau numbers listed, before modification by technical directive.
161213 AND UP; ALSO 160775 THRU 160785 AFTER F/A-18 AFC 772	Applicable to aircraft modified during production; also applicable when affected aircraft have been modified by technical directive.
160775 THRU 160785; WHEN NO. 2 CONTROL PANEL P/N XXXX-X IS INSTALLED	Applicable to F/A-18A and F/A-18B for bureau numbers listed if panel P/N XXXX-X is installed. (Configuration before AVC)
161213 AND UP; ALSO 160775 THRU 160785; WHEN NO. 2 CONTROL PANEL P/N XXXX-Y (AVC-102) IS INSTALLED	Applicable to aircraft modified during production; also applicable to aircraft components modified to the production configuration by technical directive. (Configuration after AVC)
P/N MBEU65101-9, MBEU65101-10 & MBEU65105-3	Applicable to assemblies which are interchangeable between aircraft.
ENGINE NO. 215101 THRU 215109	Applicable to assemblies which are interchangeable between aircraft, but configurations can not be identified by part number.
CONFIG/IDENT NUMBER 84A	The CONFIG/IDENT Number is the program load identification number which identifies the software program loaded in specific programmable units. Refer to A1-F18AC-SCM-000 for CONFIG/IDENT Number tables.

**10. TECHNICAL DIRECTIVES.**

11. Technical directives are documents which direct the accomplishment, and recording of a retrofit configuration or inspection to delivered aircraft, or aircraft components.

**12. AIRFRAME CHANGE (AFC) AND AIRBORNE TACTICAL SOFTWARE CHANGE (ASC).**

Technical directives which change configuration of aircraft structure or equipment installation, i.e. AFC, will list aircraft bureau numbers in effectivity notes and show before and after the AFC. Technical directives which change configuration of operational flight programs (OFP), i.e. ASC, will list the OFP CONFIG/IDENT NUMBER in effectivity notes and show the latest two authorized OFP programs. See AFC and ASC effectivity examples in Effectivity Note Example Table.

**13. AIRCRAFT COMPONENT CHANGES.** Technical directives which change configuration of aircraft components, i.e. AAC, ACC, AVC, AYC, and PPC will list part numbers in the effectivities. See AVC effectivity examples in Effectivity Note Example table.

**14. RECORD OF APPLICABLE TECHNICAL DIRECTIVES.**

15. The technical directives affecting this manual are listed in the Record of Applicable Technical Directives of each affected work package. Because an ASC directs all aircraft be modified within 30 days, ASC's are not listed. When all affected aircraft are modified, the before configuration is removed from the manual, and the technical directive entry is removed from the Record of Applicable Technical Directives.

**16. TECHNICAL PUBLICATIONS DEFICIENCY REPORT (TPDR).**

17. The TPDR (OPNAV FORM 4790/66) is the form for reporting errors and suspected omissions in the technical manuals. Reporting procedures are in OPNAVINST 4790.2 SERIES.

**18. QUALITY ASSURANCE PROCEDURES.**

19. Procedures or parts of procedures which require quality assurance inspection are identified by the letters (QA) after the applicable steps. When (QA) is assigned to a step or a heading which is immediately followed by substeps, the inspection requirement is applicable to all substeps.

20. When doing maintenance in any area, a visual inspection of the area will be made for cracks, corrosion and security of component installation before securing the area for flight.

**21. TEST PROCEDURES.**

22. Test procedures are done as part of malfunction isolation, during periodic inspection, or when correct system operation is to be verified.

23. Satisfactory completion of test procedures verifies correct system operation. Do steps in sequence. When doing system test procedures, make sure:

- a. System Required Components identified in procedure are installed.
- b. Related Systems Required identified in procedure are operative.
- c. Steps are done in sequence.
- d. Results are as shown in Normal Indication column, or do Remedy for Abnormal Indication.
- e. Each malfunction is corrected before going to next step by repeating portion of test procedure which failed.

**24. TROUBLESHOOTING.**

**25. TROUBLESHOOTING PROCEDURES.** These procedures provide a series of steps with a NO-YES column. These steps lead to corrective action for the malfunction. Troubleshooting procedures list the data below for use as an aid when doing procedural steps:

- a. Reference to a system schematic.
- b. Reference to a component locator.
- c. List of support equipment and materials required which will always be used in the procedure. Additional support equipment may be required.
- d. An alphabetical list of components which could cause the malfunction.

26. Troubleshooting procedures (logic trees) are referenced from a test procedure Remedy for Abnormal Indication column or from Fault Reporting Manual. Logic trees are written assuming the logic below:

- a. If doing a test procedure, all steps testing functions before the failed step had normal indication.

b. For an abnormal indication, only one malfunction exists.

c. All replacement components are ready for installation.

27. **CONTINUITY TESTING.** When doing continuity tests during troubleshooting, the items listed below must be tested, as applicable.

a. Loose electrical connectors and bent, broken, or recessed pins.

b. Continuity between specific pins per procedural step or system schematic.

c. Shorts between conductor and shield.

d. Shorts between conductor and surrounding pins on connectors.

e. Shield continuity per diagrams/system schematics.

28. **TROUBLESHOOTING BEYOND BIT/SYSTEM TESTING.** This is required when any of the conditions listed below exist:

a. Malfunction was not detected by Built-In Test (BIT).

b. Malfunction was not detected by a functional test procedure.

c. When a troubleshooting procedure did not correct the malfunction.

d. When a troubleshooting procedure does not exist.

29. When any of the conditions listed in paragraph 28 exist, troubleshooting procedure/logic must then be determined. Use steps listed below to aid in determining procedure/logic:

a. Use referenced system schematic or select applicable system schematic for malfunction. Use schematic for troubleshooting beyond BIT analysis as listed below:

(1) Analyze interface of system components. Determine logic wiring and/or components which may cause the malfunction. Determine when an interfacing component could cause the malfunction.

(2) When malfunction can be caused by mission computer system signal interface, do applicable steps below:

(a) Analyze mission computer system integrated functions. Use REF CODES on system schematics for aid when interpreting computer software logic (A1-F18A( )-OLD-( ) series manuals).

(b) Memory inspect suspected Input/Output REF CODES (A1-F18AC-FIM-100).

b. Review VIDS/MAF (OPNAV 4790/60) in Aircraft Discrepancy Book for related malfunctions.

(1) Analyze system/related system maintenance codes reported by Nose Wheelwell Digital Display Indicator.

(2) Determine if aircraft components that have been replaced could cause malfunction.

(3) When a repeat malfunction exists, analyze previous maintenance action completed for the malfunction.

(a) When component replacement is/was done, analyze component history as listed:

1) Determine where component came from.

2) Determine previous history of component (when available).

3) Determine if similar malfunction occurred on another aircraft.

4) Determine if replaced component could be causing existing malfunction.

5) Determine if replacing component again would correct malfunction.

(b) Determine if any rigging or control procedures that have been done could cause the malfunction.

(c) Determine when rigging/boresight procedures should be done to verify system operation for malfunction.

## 30. TROUBLESHOOTING IMPROVEMENTS.

When a troubleshooting procedure did not correct a malfunction and it is determined that additional or new troubleshooting is required, submit Technical Publica-



tions Deficiency Report (TPDR) providing the information listed below:

- a. Fault descriptor for A1-F18( )-FRM-000.
- b. Corrective action taken for malfunction.
- c. Logic used to isolate malfunction.
- d. Probable changes that could shorten troubleshooting time for malfunction.

### 31. DIAGRAMS.

32. System schematics are in A1-F18A( )-( )-500 series manuals.

### 33. ILLUSTRATED PARTS BREAKDOWN.

34. Each illustrated parts breakdown (IPB) in this manual has a parts list and illustration for the requisition, storage, authority for use and identification of parts. The illustration is integrated with, and supports, both the maintenance procedure and the parts list within each work package.

35. **PART NUMBER COLUMN.** Footnote symbols in the part number column are defined following the last part listed in each parts list (also see converted part numbers, this WP).

36. **INDENTION.** The first entry in the description column of each parts list is the figure title. This figure title identifies the parts list with the related maintenance procedure and is shown in the first indent. All parts data required to support the specific maintenance procedure is below the figure title in the second indent.

37. **COMMON NAMES.** The official nomenclature in the description column may not be the name commonly used for an item. If different from the official nomenclature, the common name is shown in parentheses in the description column immediately following the official nomenclature, the common name is shown in parentheses in the description column immediately following the official nomenclature.

38. **COMMERCIAL AND GOVERNMENT ENTITY CODES.** Entity code or manufacturer's name and address are shown in the Description column in parentheses after the nomenclature for the item. These codes are per the Commercial and Government Entity

(CAGE) Handbook H4/H8 Series. No code indicates the item is a government standard part.

39. **ATTACHING PARTS.** Attaching parts are identified by (AP) after the nomenclature of the item in the Description column. Attaching parts are listed immediately following the part they attach.

40. **SPECIAL HANDLING.** Items requiring special handling such as liquid oxygen components, magnetic control items or on-board oxygen generating system (OBOGS) are identified by the acronym LOX for liquid oxygen, MAG for magnetic control and OXYGEN for on-board oxygen generating system (OBOGS) in the Description column, at the extreme right side.

41. **CONVERTED PART NUMBERS.** Some part numbers appear in the Part Number column which are different than the manufacturer's part number. These are converted part numbers. The unconverted manufacturer's part number is shown in the Description column following the manufacturer's code. Always use the part number in the Part Number column when ordering parts. If an item is not available under the listing in the Part Number column, it may be ordered using the unconverted part number found in the Description column or by using the number found on the part. Examples of special characters as they may appear in the Part Number and Description columns are shown below:

Part Number Column	Description Column
PORM	± (Plus or Minus)
DEG	° (Degree)
E	e (Lower case letter)
2	II (Roman Numeral)
0.001	.001 (Decimal)

42. **SUPERSEDED PARTS.** Superseded part numbers have been removed from the Part Number column and placed in the Description column of the superseding part (for example - supersedes 74A582090-1003). This indicates that the superseded part is usable if available through salvage, but should not be requisitioned or made.

43. **NEXT HIGHER ASSEMBLY.** Next higher assembly (NHA) data is not shown using indention. Next higher procurable assembly (NHPA) data is shown for part numbers that have a procurable NHA. The NHPA and its assigned Source, Maintenance and Recoverability (SM&R) code are in parentheses as the last entry in the Description column. Requisition the NHPA when the part listed in the Part Number column is not avail-

able from supply. The components of assemblies that required disassembly during removal from aircraft, are footnoted in the part number column.

**44. UNITS PER ASSEMBLY COLUMN (UPA).**

This column lists the total number of each part required per assembly or subassembly and are not necessarily the total number used in the end item of equipment. The letters AR (As Required) are used for items such as shims when the requirement may vary.

**45. USABLE-ON CODES.** Applicable usable-on codes are identified on the final sheet of each parts list. No entry in the Use On column indicates parts are applicable to all configurations supported by this parts list.

**46. ALTERNATE OR EQUIVALENT PARTS.** An asterisk (\*), in the Use On column, identifies alternate parts or equivalent parts that are interchangeable. When a letter code is followed by an asterisk in the Use On column, only the parts with the same letter code are interchangeable. An alternate part may be used when preferred part is not available. The asterisk is omitted for the preferred part(s). Equivalent parts are fully interchangeable. No equivalent part is preferred over another. All equivalent parts are identified by asterisks.

**47. SOURCE, MAINTENANCE AND RECOVERABILITY (SM&R) CODE COLUMN.** The codes used in this column are assigned per NAVAIRINST 4423.3 SERIES and NAVSUPINST 4423.14

SERIES which contain definitions. A dash (-) is shown in the SM&R code column when no code has been assigned. The Aviation Supply Office P2300 series publication is to be used for the most current SM&R Code assignment information if doubt exists as to the validity of any SM&R Code listed in an IPB. Refer to figure 1 for SM&R code explanations.

**48. PARTS LIST INDEX MANUAL, A1-F18AC-IPB-450.** This manual has a numerical index of part numbers and a reference designation index for use with aircraft organizational maintenance manuals. When reference designations or part numbers are known, the index locates specific maintenance instructions and parts data.

**49. NAVY (AN) STANDARD/COMMON NAME NOMENCLATURE.**

50. When an item has both Navy (AN) standard and common name nomenclature assigned, the common name nomenclature will be used in text and on illustrations. Full Navy (AN) standard nomenclature will be used in the Illustrated Parts Breakdown (IPB).

SOURCE (D012)				MAINTENANCE			
1st POSITION		2nd POSITION		3rd POSITION		4th POSITION	
P	PROCURE	A	REPLENISH	O	REPLACE OR USE AT ORGANIZATIONAL LEVEL	Z	NO REPAIR (CONSUMABLE)
		B	INSURANCE				
		C	CURE-DATED				
		D	INITIAL	F	REPLACE OR USE AT IMA LEVEL	B	RECONDITION BY ADJUSTMENT, CALIBRATION, LUBRICATION, PLATING, ETC.
		E	END ITEM GSE/STOCKED	H			
		F	GSE/NOT STOCKED	G			
K	REPAIR KIT COMPONENT	F	ORG/IMA	L	REPLACE OR USE AT SPECIALIZED IMA	O	REPAIR AT ORGANIZATIONAL LEVEL
		D	DEPOT				
		B	BOTH KITS				
M	MANUFACTURE	O	ORGANIZATIONAL	D	REPLACE OR USE AT DEPOT	F	REPAIR AT IMA LEVEL
A	ASSEMBLE	F	AFLOAT			H	
		H	ASHORE			G	
		G	BOTH			L	REPAIR AT SPECIALIZED IMA
X	MISC	D	DEPOT				
		A	REQUEST NHA	Z	NOT REQUIRED THIS APPLICATION	D	REPAIR AT DEPOT OR COMMERCIAL
		B	OBTAIN FROM SALVAGE OR ONE TIME BUY				
		C	DIAGRAMS-SCHEMATICS, INSTALL DWGS				

RECOVERABILITY (D013C)		SERVICE OPTION (D012A)	
5th POSITION		6th POSITION	
O	REPAIRABLE ITEM. CONDEMN AT ORGANIZATIONAL LEVEL.	1 2 3	APPLIES TO ENGINES ONLY. IDENTIFIES THE HIGHEST (1) TO LOWEST (3) LEVEL OF MAINTENANCE WHICH CAN REPLACE (3rd POSITION OF SM&R CODE) THE ITEM.
F H G	REPAIRABLE ITEM. CONDEMN AT INTERMEDIATE LEVEL INDICATED.	4 5 7	SAME AS ABOVE. IN ADDITION, ITEM IS A FLR WITH A UNIT COST OF OVER \$5000. THESE CODES ARE NO LONGER ASSIGNED TO NEW, NON-FAMILY RELATED ITEMS.
L	REPAIRABLE ITEM. CONDEMN AT SPECIALIZED INTERMEDIATE LEVEL.	6	NORMALLY PROCURED AND STOCK NUMBERED BUT ORGANIC CAPABILITY EXISTS FOR EMERGENCY STOP-GAP REQUIREMENTS.
		E	END-TO-END TEST REQUIRED BY IMA PRIOR TO BCM ACTION.
D	REPAIRABLE ITEM. CONDEMN AT DEPOT OR CONTRACTOR FACILITY.	J	FLR OR CONSUMABLE ITEM. CHANGE 5th POSITION SMR CODE TO "D" UNDER PICA/SICA. NAVAIR APPROVAL REQUIRED.
		8	SAME AS "J" ABOVE EXCEPT USED FOR ENGINES ONLY. APPLIES TO 2nd LEVEL OF IMA.
A	SPECIAL HANDLING REQUIRED. CONTACT ITEM MANAGER FOR DISPOSAL INSTRUCTIONS	9	SAME AS "J" ABOVE EXCEPT USED FOR ENGINES ONLY. APPLIES TO 3rd LEVEL OF IMA.
		M	ITEM IS A FLR WITH A UNIT COST OF OVER \$5000. THESE CODES ARE NO LONGER ASSIGNED TO NEW, NON-FAMILY RELATED ITEMS.
Z	NON-REPAIRABLE ITEM. CONDEMN AT LEVEL IN 3rd POSITION.	N	ASSIGNED TO XB SOURCE CODE AND INDICATES ITEM IS PROCURED LOCALLY. NOT STOCKED IN THE SUPPLY SYSTEM.
		T	ASSIGNED TO TRAINING DEVICES WITH SOURCE CODE OF "PD". INDICATES ITEM IS NOT A PROCURABLE SPARE. NSN IS ASSIGNED ONLY TO PERMIT VISIBILITY OF REPAIR PART RELATIONSHIP.

Figure 1. SM&amp;R Code Explanation

**THIS PAGE INTENTIONALLY LEFT BLANK.**

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TESTING - BUILT-IN TEST**  
**INTERFERENCE BLANKER SYSTEM**

**Reference Material**

Line Maintenance Procedures ..... A1-F18AC-LMM-000

**Alphabetical Index**

Subject	Page No.
Built-In Test Displays, Figure 1 .....	5
Interference Blanker Test, Table 1 .....	1

**Record of Applicable Technical Directives**

Type/ Number	Date	Title and ECP No.	Date Incorp.	Remarks
AFC-253	—	US Naval Reserves A+ Avionics Upgrade; Incorporation of (ECP MDA-F/A-18-0560R1)	1 Jan 01	—
AFC-292	—	US Marine Corps Reserves A+ Avionics Upgrade; Incorporation of (ECP MDA-F/A-18-0583)	1 Jan 01	—

**Table 1. Interference Blanker Test**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p style="text-align: center;"><b>System Required Components</b></p> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px; margin-right: 10px;">1</div> <div> <p>Interference Blanker MX-9965/A</p> <p>Interference Blanker MX-11741/A</p> </div> </div> <p style="text-align: center;"><b>Related Systems Required</b></p> <p>Avionics Cooling System</p> <p>Electrical System</p> <p>Maintenance Status Display and Recording System</p> <p>Mission Computer System</p> <p>Multipurpose Display Group</p>		


Table 1. Interference Blanker Test (Continued)

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>Support Equipment Required</b></p> <p align="center">None</p> <p align="center"><b>Materials Required</b></p> <p align="center">None</p> <p align="center"><b>NOTE</b></p> <p>If a malfunction occurs during this test, make sure circuit breakers shown in WP004 00 are closed.</p> <p>For built-in-test displays, refer to figure 1.</p> <p>For component locator, refer to WP004 00.</p>		
<p>1. PRELIMINARY.</p> <p>a. Observe WPN SYS FAIL indicator on Digital Display Indicator ID-2150/ASM-612 in nose wheelwell.</p> <p>b. Apply electrical power (A1-F18AC-LMM-000).</p> <p>c. On GND PWR control panel assembly, set and hold 1 and 2 switches to B ON and 3 switch to A ON for three seconds.</p> <p>d. On Left and Right Digital Display Indicator IP-1317( ) (LDDI and RDDI), set power switch to DAY or NIGHT. Allow 2 minutes for warm-up, and adjust BRT and CONT controls for best display.</p>	<p>WPN SYS FAIL indicator is black (not latched).</p> <p>Switches remain on (latched).</p> <p>1. LDDI and RDDI have displays and center pushbutton switch on bottom row is labeled MENU.</p>	<p>If latched, do built-in test/reset procedure (A1-F18AC-LMM-000).</p> <p>1. If switches unlatch in 10 to 30 seconds, apply external cooling air to aircraft.</p> <p>2. If switches do not remain on, troubleshoot (A1-F18AC-420-200, WP006 00).</p> <p>1. No display on LDDI F/A-18A, do table 1 (A1-F18AC-745-200, WP006 00), F/A-18B, do table 1 (A1-F18AC-745-200, WP007 00).</p> <p>2. No display on RDDI F/A-18A, do table 2 (A1-F18AC-745-200, WP007 00), F/A-18B, do table 2 (A1-F18AC-745-200, WP007 00).</p> <p>3. If STANDBY is displayed on LDDI or RDDI, replace Left or Right Digital Display Indicator IP-317( ) (A1-F18AC-745-300, WP004 00).</p>

Table 1. Interference Blanker Test (Continued)

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>2. PROCEDURE.</p> <p>a. On RDDI, do the substeps below:</p> <p>(1) Press and release MENU pushbutton switch.</p> <p>(2) Press and release BIT pushbutton switch.</p> <p>(3) Press and release EW BIT pushbutton switch.</p> <p>(4) Press and release ICS/IBS/RALT BIT pushbutton switch.</p> <p>3. FINAL.</p> <p>a. On LDDI and RDDI, set power switch to OFF.</p> <p>b. Remove electrical power (A1-F18AC-LMM-000).</p>	<p>2. LDDI has cautions and advisory display.</p> <p>RDDI has menu display, (figure 1).</p> <p>RDDI has BIT control display.</p> <p>RDDI has EW BIT control display.</p> <p>IBS BIT status displays IN TEST then GO.</p>	<p>4. If BRT or CONT controls do not affect display, replace Left or Right Digital Display Indicator IP-317( ) (A1-F18AC-745-300, WP004 00).</p> <p>Replace Left Digital Display Indicator IP-1317( ) (A1-F18AC-745-300, WP004 00).</p> <p>Replace Right Digital Display Indicator IP-1317( ) (A1-F18AC-745-300, WP004 00).</p> <p>Replace Right Digital Display Indicator IP-1317( ) (A1-F18AC-745-300, WP004 00).</p> <p>Replace Right Digital Display Indicator IP-1317( ) (A1-F18AC-745-300, WP004 00).</p> <p>1. If display is DEGD, do table 1, WP005 00.</p> <p>2. If display is RESTRT, press ICS/IBS/RALT BIT pushbutton switch.</p> <p>3. If RESTRT is again displayed, do table 2, WP005 00.</p>

**Table 1. Interference Blanker Test (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
c. Observe Digital Display Indicator ID-2150/ASM-612 in nose wheelwell.	WPN SYS FAIL indicator is black (not latched).	<ol style="list-style-type: none"><li>1. Read, record and then reset maintenance codes (A1-F18AC-LMM-000).</li><li>2. If code 004 exists, replace Control-Converter C-10382/A (A1-F18AC-741-300, WP005 00).</li></ol>
<b>LEGEND</b>		
 On F/A-18A 162394 thru 163175 after F/A-18 AFC 253 or F/A-18 AFC 292.		



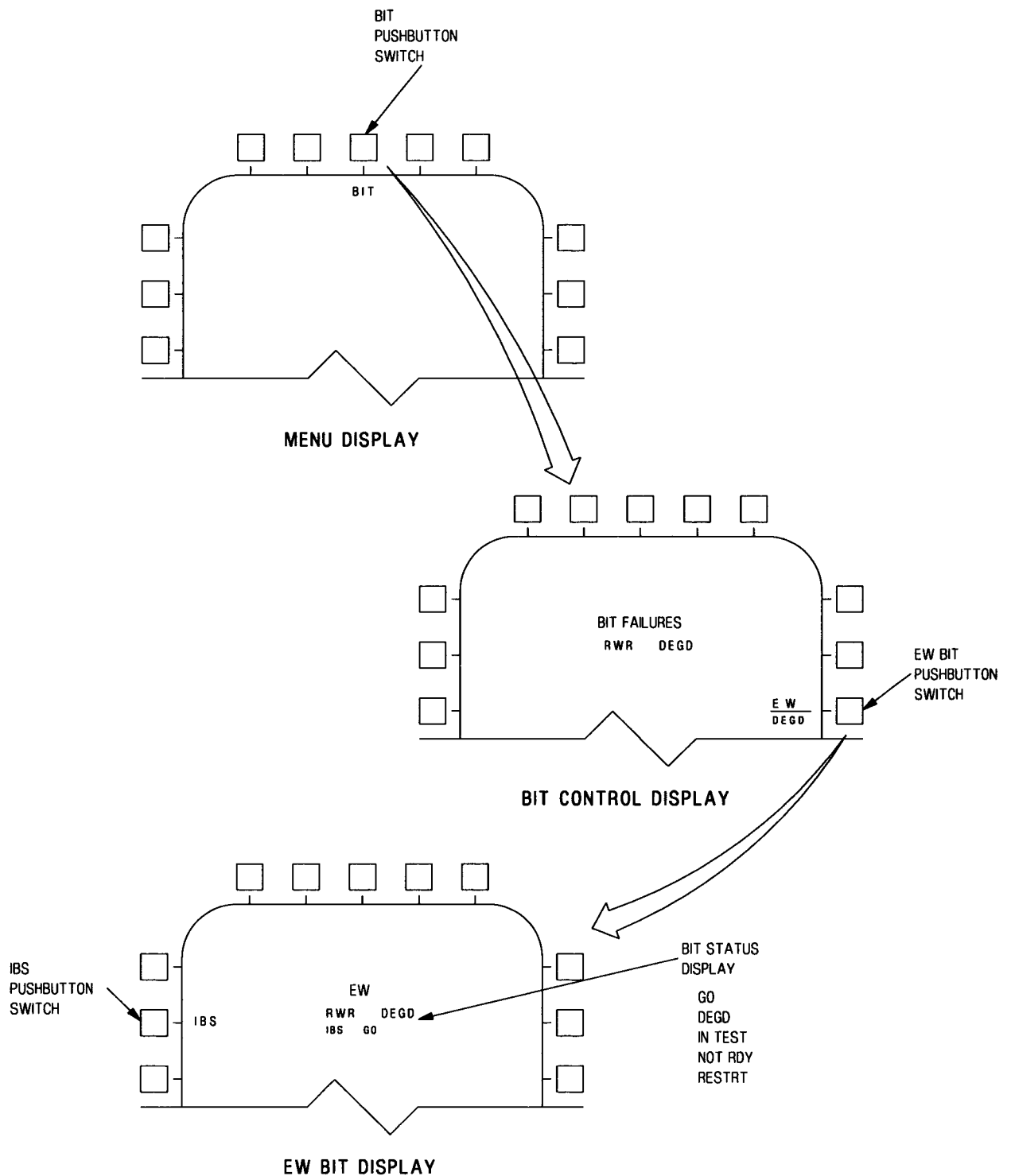


Figure 1. Built-In Test Displays

**THIS PAGE INTENTIONALLY LEFT BLANK.**

---

**ORGANIZATIONAL MAINTENANCE  
TESTING AND TROUBLESHOOTING  
LOCATOR  
INTERFERENCE BLANKER SYSTEM**

---

**Reference Material**

None

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Interference Blanker System Locator, Figure 1 .....	2

**Record of Applicable Technical Directives**

<b>Type/ Number</b>	<b>Date</b>	<b>Title and ECP No.</b>	<b>Date Incorp.</b>	<b>Remarks</b>
AFC-253	—	US Naval Reserves A+ Avionics Upgrade; Incorporation of (ECP MDA-F/A-18-0560R1)	1 Jan 01	—
AFC-292	—	US Marine Corps Reserves A+ Avionics Upgrade; Incorporation of (ECP MDA-F/A-18-0583)	1 Jan 01	—

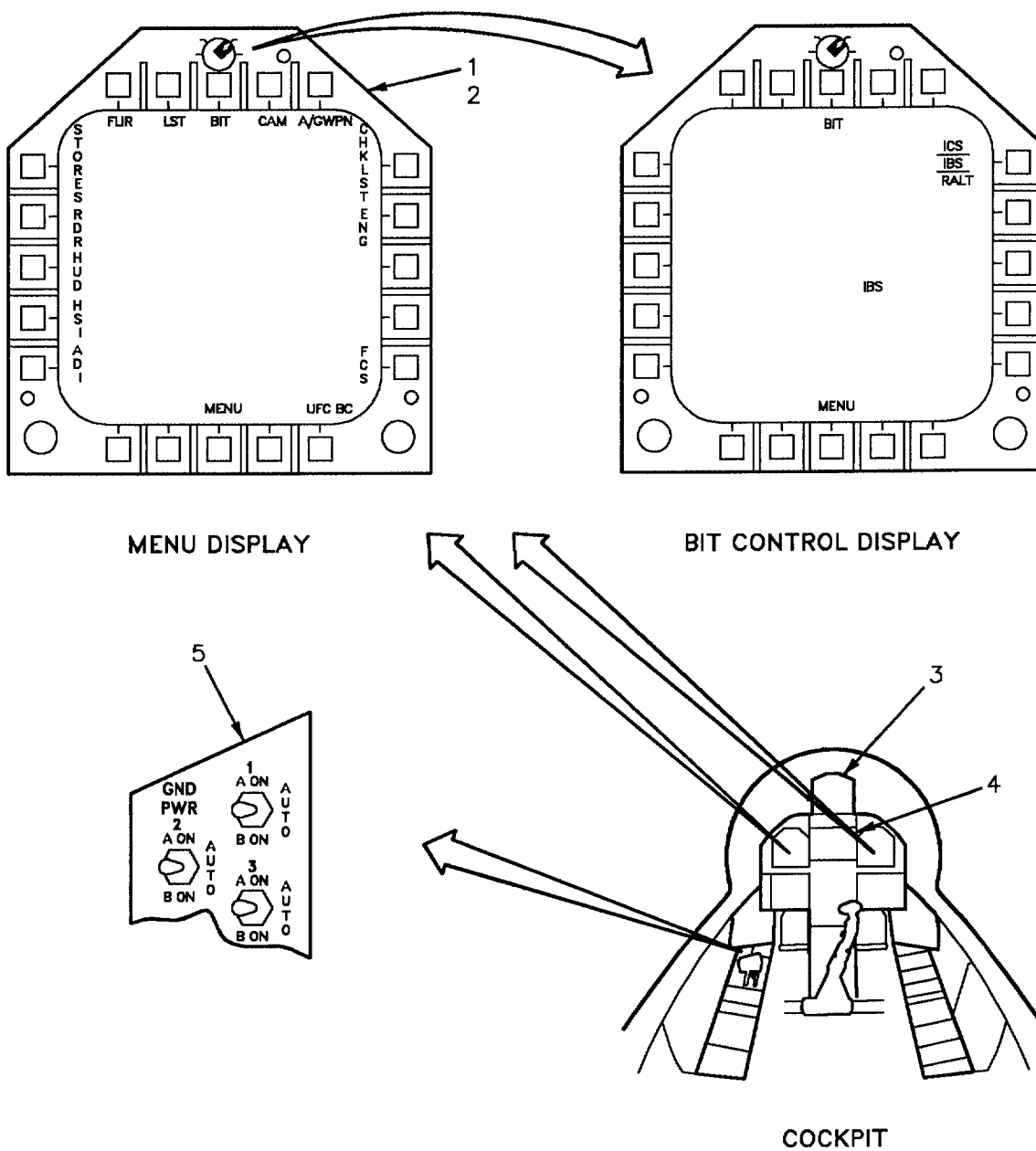


Figure 1. Interference Blanker System Locator (Sheet 1)

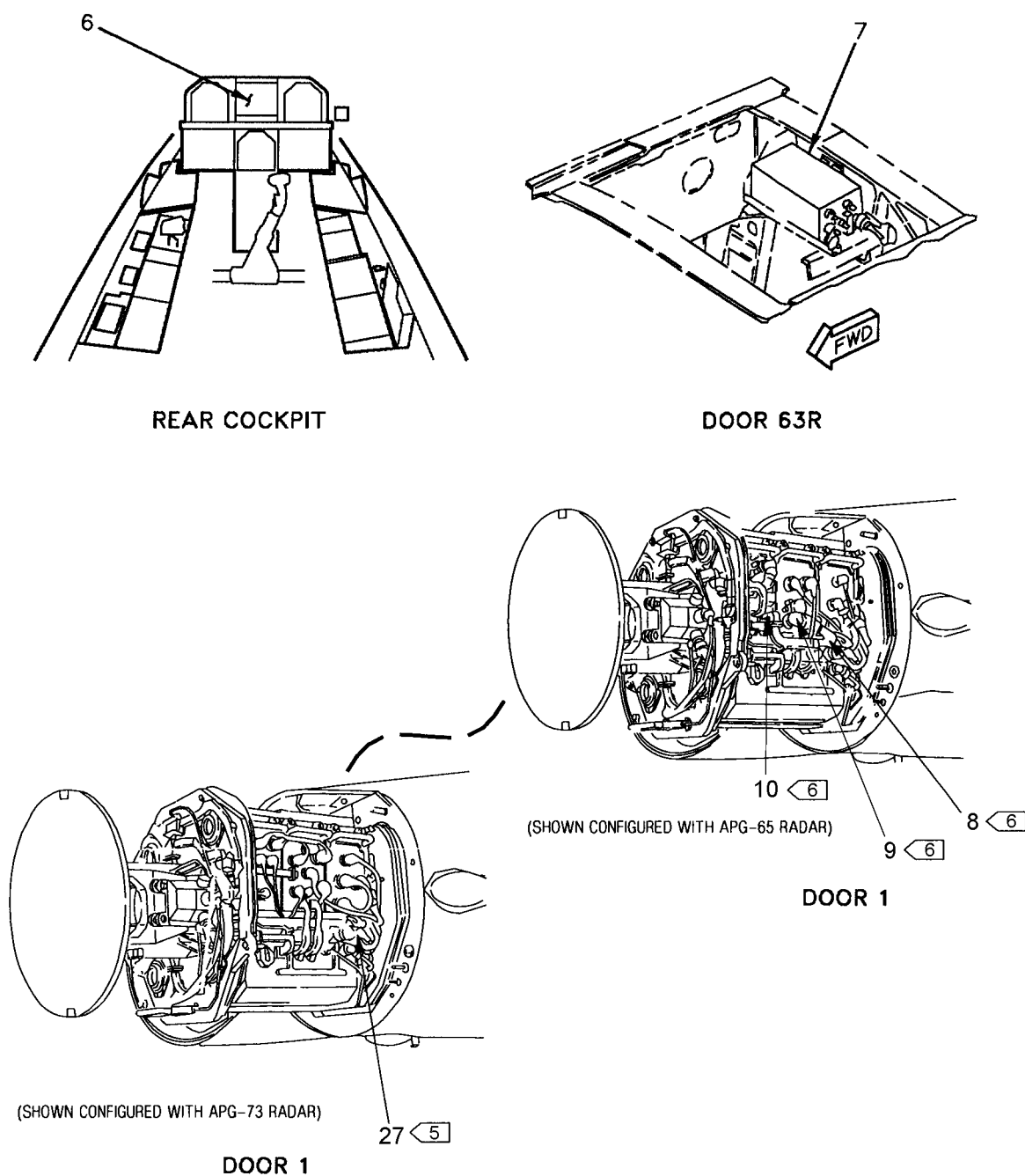
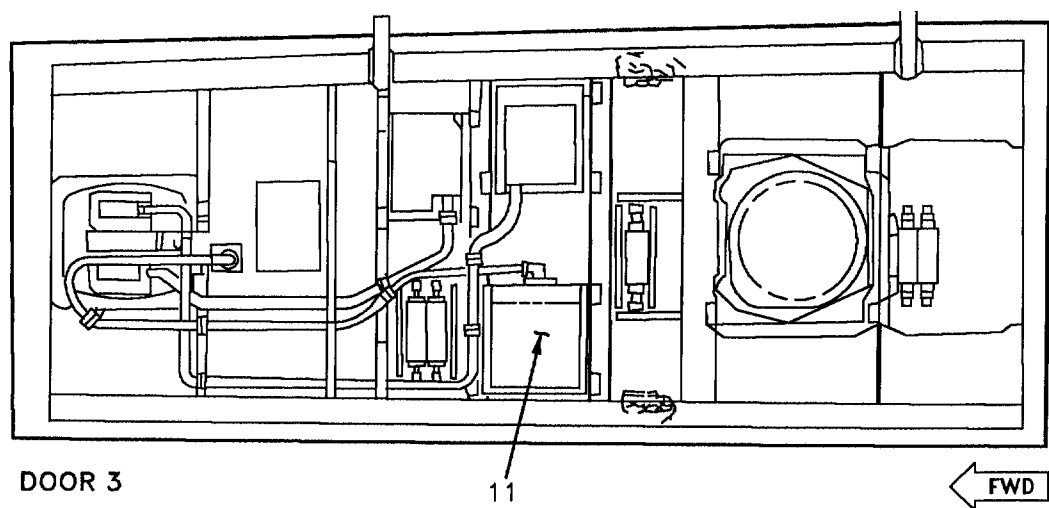
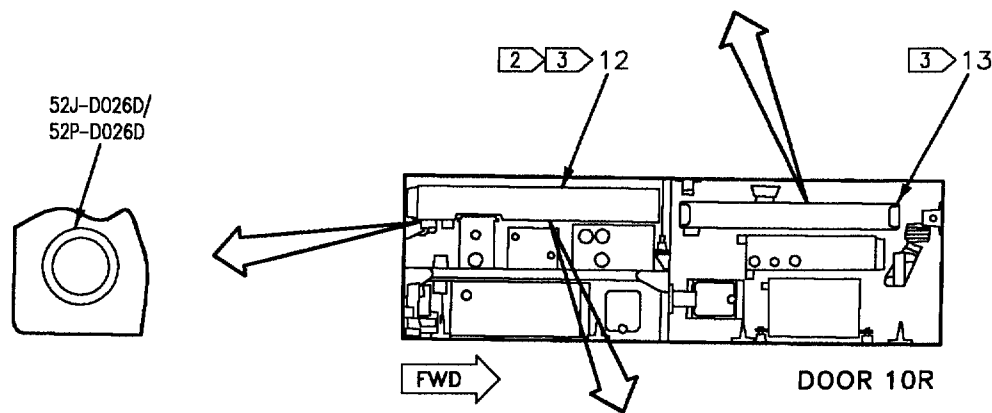


Figure 1. Interference Blanker System Locator (Sheet 2)

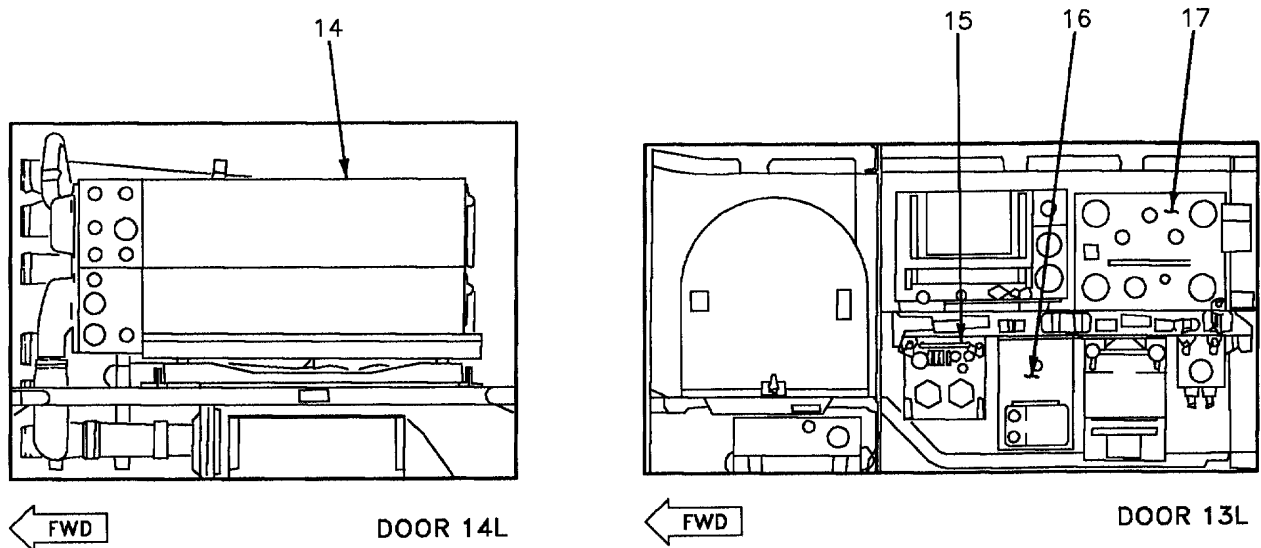


3 52A-D024 NO. 2 CIRCUIT BREAKER PANEL ASSEMBLY			
ZONE	REF DES	NOMENCLATURE	BUS
A11	82CBD002	CSC	R 115VAC ØA
A12	66CBD002	BLANKER	R 115VAC ØA
B11	82CBD003	CSC	R 115VAC ØB
C11	82CBD004	CSC	R 115VAC ØC

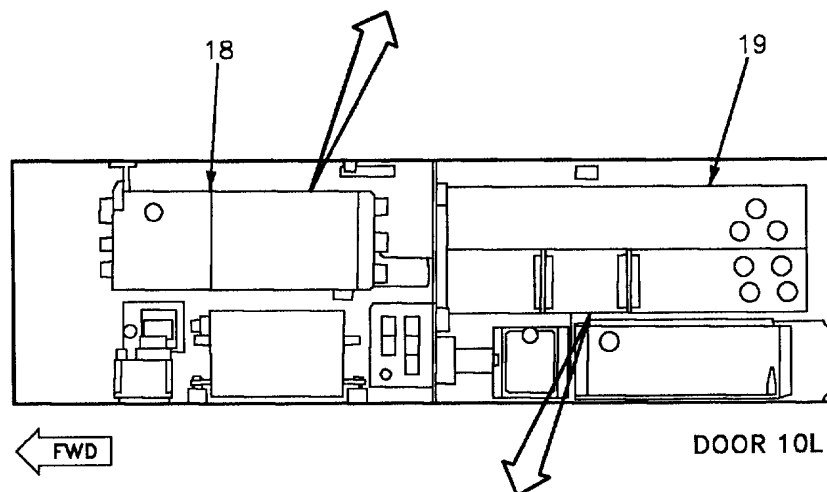


52A-D026 NO. 4 CIRCUIT BREAKER PANEL ASSEMBLY			
ZONE	REF DES	NOMENCLATURE	BUS
3 B3	82CBD005	CSC	R 28VDC
2 C7	82CBD004	CSC	R 115VAC ØC
2 C8	82CBD003	CSC	R 115VAC ØB
2 C9	82CBD002	CSC	R 115VAC ØA
2 C12	82CBD005	CSC	R 28VDC
2 D9	66CBD002	BLANKER	R 115VAC ØA

Figure 1. Interference Blanker System Locator (Sheet 3)



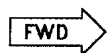
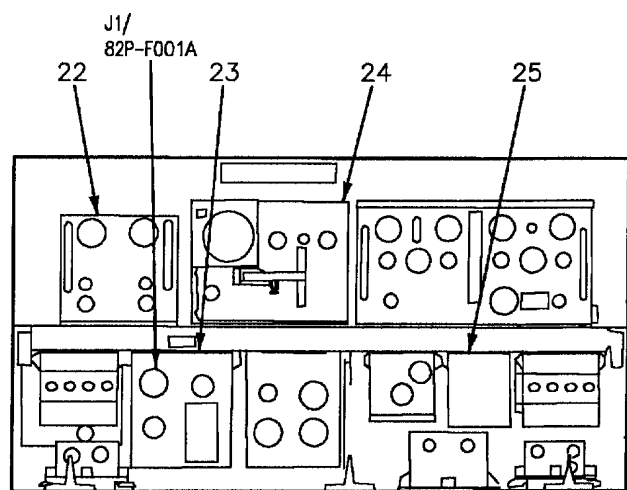
52A-C159 NO. 8 CIRCUIT BREAKER/RELAY PANEL ASSEMBLY			
ZONE	REF DES	NOMENCLATURE	BUS
D2	85CBC004	MSDRS	MAINT 24/28VDC L 115VAC ØC L 115VAC ØB L 115VAC ØA
D12	80CBC006	MMD	
E12	80CBC005	MMD	
F12	80CBC004	MMD	



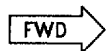
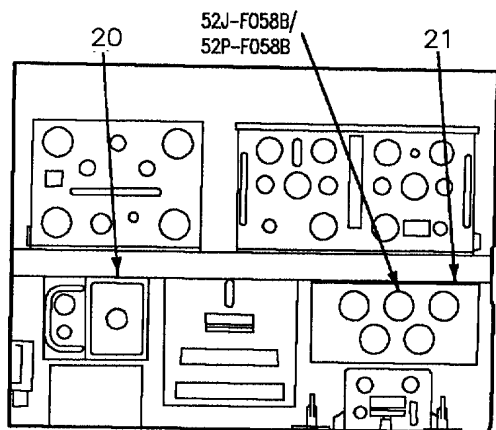
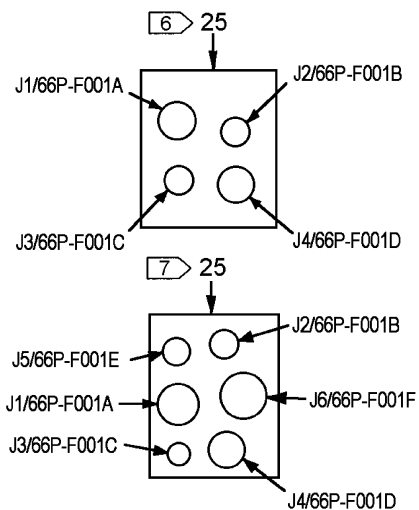
52A-C057 NO. 7 CIRCUIT BREAKER/RELAY PANEL ASSEMBLY			
ZONE	REF DES	NOMENCLATURE	BUS
A20	83CBC006	MISSION COMP NO 1	L 115VAC ØA L 115VAC ØB L 115VAC ØC
B20	83CBC007	MISSION COMP NO 1	
C20	83CBC008	MISSION COMP NO 1	

00400104

Figure 1. Interference Blanker System Locator (Sheet 4)



DOOR 13R



DOOR 14R

NOSE WHEELWELL, LEFT SIDE  
LOOKING AFT AND OUTBOARD

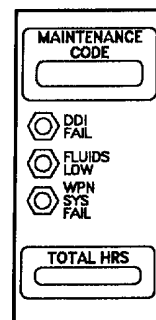
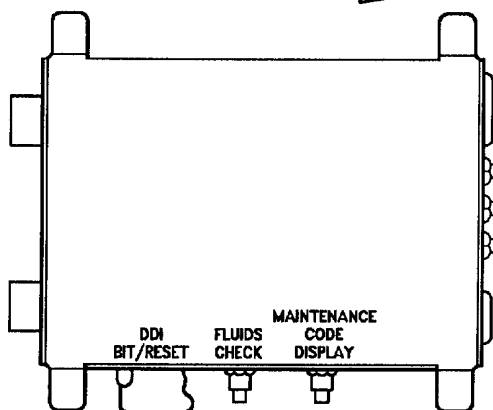
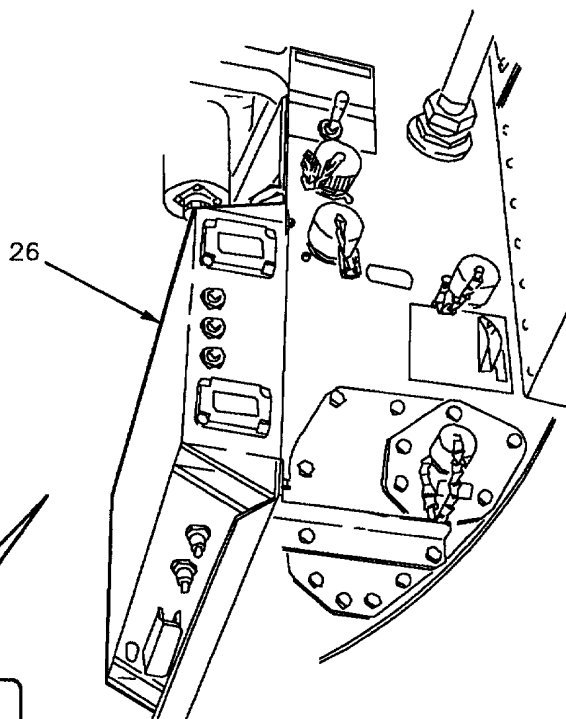


Figure 1. Interference Blanker System Locator (Sheet 5)



	Nomenclature	Index No.	Ref Des
	COMMAND LAUNCH COMPUTER CP-1001( )/AWG	24	61A-F010
6	COMPUTER POWER SUPPLY CP-1325/APG-65	9	60A-A505
5	COMPUTER POWER SUPPLY CP-2062/APG-73	9	60A-A505
	CONTROL-CONVERTER	23	82A-F001
4	COUNTERMEASURES COMPUTER CP-1293( )/ALR-67(V)	16	62A-E006
	DIGITAL DATA COMPUTER NO. 1	17	83A-E001
	NOSE WHEELWELL DIGITAL DISPLAY INDICATOR	26	85A-G003
	ELECTRONIC EQUIPMENT CONTROL	4	79A-J006
	GND PWR CONTROL PANEL ASSEMBLY	5	1A-H004
	HEAD-UP DISPLAY UNIT	3	79A-J001
6	INTERFERENCE BLANKER MX-9965/A	25	66A-F001
7	INTERFERENCE BLANKER MX-11741/A	25	66A-F001
	LEFT DIGITAL DISPLAY INDICATOR	1	80A-H001
3	NO. 2 CIRCUIT BREAKER PANEL ASSEMBLY	13	52A-D024
	NO. 2 RELAY PANEL ASSEMBLY	21	52A-F058
	NO. 4 CIRCUIT BREAKER PANEL ASSEMBLY	12	52A-D026
	NO. 7 CIRCUIT BREAKER/RELAY PANEL ASSEMBLY	19	52A-C057
	NO. 8 CIRCUIT BREAKER/RELAY PANEL ASSEMBLY	18	52A-C159
5	RADAR DATA PROCESSOR CP-2062/APG-73	27	60A-A503
6	RADAR RECEIVER-EXCITER R-2089/APG-65	10	60A-A506
	RADAR RECEIVER-TRANSMITTER RT-1028/APN-202	11	72A-A002
6	RADAR TARGET DATA PROCESSOR CP-1326/APG-65	8	60A-A503
	REAR ELECTRONIC EQUIPMENT CONTROL	6	76A-L028
	RECEIVER-TRANSMITTER RT-1015( )/APN-194(V)	7	67A-T001
	RECEIVER-TRANSMITTER RT-1079( )/ALQ-126	14	64A-E001
	RECEIVER-TRANSMITTER RT-1157A/APX-100(V)	15	78A-E001
	RECEIVER-TRANSMITTER RT-1159/A	22	69A-F001

Figure 1. Interference Blanker System Locator (Sheet 6)

Nomenclature	Index No.	Ref Des
RIGHT DIGITAL DISPLAY INDICATOR	2	80A-J002
SIGNAL DATA RECORDER	20	85A-F001

**LEGEND**

1. Aircraft connector locations are shown in A1-F18A( )-WDM-000.

2 161353 thru 161359.

3 161360 and up.

4 161702 and up.

5 F/A-18A 162394 thru 163175 after F/A-18 AFC 292.

6 F/A-18A before F/A-18 AFC 253 or F/A-18 AFC 292 and F/A-18B.

7 F/A-18A 162394 thru 163175 after F/A-18 AFC 253 or F/A-18 AFC 292.

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TROUBLESHOOTING - BUILT-IN TEST**  
**INTERFERENCE BLANKER SYSTEM**

**Reference Material**

Line Maintenance Procedures ..... A1-F18AC-LMM-000  
Line Maintenance Access Doors ..... A1-F18AC-LMM-010

**Alphabetical Index**

Subject	Page No.
Table 1. Maintenance Action For System Maintenance Code .....	1
Table 2. IBS BIT Status Message is RESTRT .....	2
Table 3. IBS BIT Status is DEGD .....	5

**Record of Applicable Technical Directives**

Type/ Number	Date	Title and ECP No.	Date Incorp.	Remarks
AFC-253	—	US Naval Reserves A+ Avionics Upgrade; Incorporation of (ECP MDA-F/A-18-0560R1)	1 Jan 01	—
AFC-292	—	US Marine Corps Reserves A+ Avionics Upgrade; Incorporation of (ECP MDA-F/A-18-0583)	1 Jan 01	—

**Table 1. Maintenance Action For System Maintenance Code**

Maintenance Code	Troubleshooting For System Maintenance Code
149	<div>1</div> 1. Replace Interference Blanker MX-9965/A or MX-11741/A (A1-F18AC-760-300, WP003 00). 2. If malfunction still exists, do table 3, this WP.
<p style="text-align: center;"><b>LEGEND</b></p> <div>1</div> If WRA was replaced before test and malfunction still exists, start troubleshooting at step 2.	

Table 2. IBS BIT Status Message is RESTRT

Support Equipment Required

NOTE

Alternate item type designations or part numbers are listed in parentheses.

Part Number or Type Designation	Nomenclature
77/BN	Multimeter

Materials Required

None

NOTE

Interference Blanker System Functional Schematic (A1-F18AC-760-500, WP004 00) may be used with this procedure.

For locator, refer to WP004 00.

Malfunction is caused by one of the items listed below:

Aircraft Wiring

Control-Converter C-10382/A

1

Interference Blanker MX-9965/A

2

Interference Blanker MX-11741/A

No. 2 Circuit Breaker Panel Assembly

No. 2 Relay Panel Assembly



No. 4 Circuit Breaker Panel Assembly

Procedure	No	Yes
<div>CAUTION</div> <div>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</div> <div>NOTE</div> <div>The question used in logic tree “Does continuity exist” means to test for the items listed below:</div> <div> <div>1. Pin to pin test per procedural step.</div> <div>2. Shorts to ground.</div> <div>3. Shorts between surrounding pins on connectors.</div> <div>4. Shorts between shield and conductors.</div> <div>5. Shield continuity.</div> </div>		

Table 2. IBS BIT Status Message is RESTRT (Continued)

Procedure	No	Yes
<p>a. Do Control-Converter C-10382/A Test (A1-F18AC-741-200, WP005 00). If test is good, do the substeps below:</p> <p>(1) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(2) Open door 13R (A1-F18AC-LMM-010).</p> <p>(3) Disconnect 66P-F001B from Interference Blanker MX-9965/A.</p> <p>(4) Apply electrical power (A1-F18AC-LMM-000).</p> <p>(5) On GND PWR control panel assembly, set 3 switch to B ON, and hold for 3 seconds.</p> <p>(6) Does 115vac exist from 66P-F001B pin E to 66P-F001B pin A (ground)? . . . . .</p>	b	i
<p>b. Do the substeps below:</p> <p>(1) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(2) Open door 10R (A1-F18AC-LMM-010).</p> <p>(3) On 161353 THRU 161359, disconnect 52P-D026D from no. 4 circuit breaker panel assembly.</p> <p>(4) On 161360 AND UP, disconnect 52P-D024D from no. 2 circuit breaker panel assembly.</p> <p>(5) On 161353 THRU 161359, does continuity exist from 52P-D026D pin 34 to 66P-F001B pin E? . . . . .</p> <p>(6) On 161360 AND UP, does continuity exist from 52P-D024D pin 61 to 66P-F001B pin E? . . . . .</p>	c     c	f     f
<p>c. Do the substeps below:</p> <p>(1) Open door 14R (A1-F18AC-LMM-010).</p> <p>(2) Disconnect 52P-F058B from no. 2 relay panel assembly.</p> <p>(3) Does continuity exist from 52J-F058B pin 30 to 52J-F058B pin 31? . . . . .</p>	d	e
<p>d. Isolate between no. 2 relay panel assembly wiring and relay 1K-F059 (A1-F18AC-420-300, WP033 00). Do step 1. . . . .</p>	-	-
<p>e. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) from:</p> <p>On 161353 THRU 161359,</p> <p>52P-D026D pin 34 to 52P-F058B pin 30 52P-F058B pin 31 to 66P-F001B pin E. Do step 1. . . . .</p> <p>On 161360 AND UP,</p> <p>52P-D024D pin 61 to 52P-F058B pin 30 52P-F058B pin 31 to 66P-F001B pin E. Do step 1. . . . .</p>	-    -	-    -

Table 2. IBS BIT Status Message is RESTRT (Continued)

Procedure	No	Yes
f. Does continuity exist from:		
On 161353 THRU 161359, 66P-F001B pin A to ground? .....	j	g
On 161360 AND UP, 66P-F001B pin A to ground? .....	j	h
g. Isolate between no. 4 circuit breaker panel assembly wiring and 66CBD002 (A1-F18AC-420-300, WP025 00). Do step 1.....	-	-
h. Isolate between no. 2 circuit breaker panel assembly wiring and 66CBD002 (A1-F18AC-420-300, WP024 00). Do step 1.....	-	-
i. Do the substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		
(2) Disconnect 66P-F001C.		
(3) Disconnect 82P-F001A from Control-Converter C-10382/A.		
(4) Does continuity exist from:		
66P-F001C pin 17 to 82P-F001A pin 45		
66P-F001C pin 18 to 82P-F001A pin 44		
66P-F001C pin 11 to 82P-F001A pin 46		
66P-F001C pin 12 to 82P-F001A pin 42? .....	j	k
j. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step 1.....	-	-
 k. Replace Interference Blanker MX-9965/A (A1-F18AC-760-300, WP003 00). Do step 1. ....	-	-
 Replace Interference Blanker MX-11741/A (A1-F18AC-760-300, WP003 00). Do step 1. ....	-	-
l. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 52P-D024D		
(2) 52P-D026D		
(3) 66P-F001B		
(4) 66P-F001C		
(5) 82P-F001A		
(6) Door 10R		




**Table 2. IBS BIT Status Message is RESTRT (Continued)**

Procedure	No	Yes
(7) Door 13R		
(8) Door 14R .....	-	-
<b>LEGEND</b>  <div> <div>1</div> On F/A-18A before F/A-18 AFC 253 or F/A-18 AFC 292 and F/A-18B. </div> <div> <div>2</div> On F/A-18A 162394 thru 163175 after F/A-18 AFC 253 or F/A-18 AFC 292. </div>		

**Table 3. IBS BIT Status is DEGD**

<b>Support Equipment Required</b>	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
77/BN	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
Interference Blanker System Functional Schematic (A1-F18AC-760-500, WP004 00) may be used with this procedure.	
For locator, refer to WP004 00.	
Malfunction is caused by one of the items listed below:	
Aircraft Wiring	
Control-Converter C-10382/A	
<div>1</div>	Interference Blanker MX-9965/A
<div>2</div>	Interference Blanker MX-11741/A

Table 3. IBS BIT Status is DEGD (Continued)

Procedure	No	Yes
<div style="text-align: center;">  <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol> </div>		
a. Open door 13R (A1-F18AC-LMM-010). On Interference Blanker MX-9965/A or MX-11741/A, is FAIL indicator black and white? .....	c	b
b. Remove electrical power (A1-F18AC-LMM-000). Replace Interference Blanker MX-9965/A or MX-11741/A (A1-F18AC-760-300, WP003 00). Do step f. ....	-	-
c. Do Control-Converter C-10382/A Test (A1-F18AC-741-200, WP005 00). If test is good, do the substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		
(2) Disconnect 82P-F001A from Control-Converter C-10382/A.		
(3) Disconnect 66P-F001C from Interference Blanker MX-9965/A or MX-11741/A.		
(4) Does continuity exist from 66P-F001C pin 17 to 82P-F001A pin 45? .....	d	e
d. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step f. ....	-	-
e. Replace Interference Blanker MX-9965/A or MX-11741/A (A1-F18AC-760-300, WP003 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 82P-F001A		
(2) 66P-F001C		
(3) Door 13R .....	-	-
<p style="text-align: center;"><b>LEGEND</b></p> <p> On F/A-18A before F/A-18 AFC 253 or F/A-18 AFC 292 and F/A-18B.</p> <p> On F/A-18A 162394 thru 163175 after F/A-18 AFC 253 or F/A-18 AFC 292.</p>		



---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TESTING - FUNCTIONAL TEST**  
**COUNTERMEASURES DISPENSING SYSTEM**

---

<b>Title</b>	<b>WP Number</b>
Functional Test Using AN/ALM-70A Test Set .....	006 01
Functional Test Using AN/ALM-225 Test Set .....	006 02

**THIS PAGE INTENTIONALLY LEFT BLANK.**

---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TESTING - FUNCTIONAL TEST USING AN/ALM-70A TEST SET**  
**COUNTERMEASURES DISPENSING SYSTEM**

---

**Reference Material**

Line Maintenance Procedures . . . . . A1-F18AC-LMM-000  
Line Maintenance Access Doors . . . . . A1-F18AC-LMM-010  
Tactical Electronic Warfare Systems . . . . . A1-F18AC-760-300  
Dispenser Module D-27/ALE-29A . . . . . WP009 00

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Table 1. Countermeasures Dispensing System AN/ALE-39 Test . . . . .	1

**Record of Applicable Technical Directives**

None

**Table 1. Countermeasures Dispensing System AN/ALE-39 Test**

Procedure	Normal Indication	Remedy for Abnormal Indication
<b>System Required Components</b>  All system components installed.		
<b>Related Systems Required</b>  Electrical System Master Arm Control Panel Assembly		
<b>Support Equipment Required</b>		
<b>NOTE</b>  Alternate item type designations or part numbers are listed in parentheses.		
<b>Part Number or Type Designation</b>  74D420030-1001 AN/ALM-70A  260-6XLP (AN/USM-311)	<b>Nomenclature</b>  Proximity Switch Control Countermeasures Dispenser System Multimeter	

**Table 1. Countermeasures Dispensing System AN/ALE-39 Test (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>Materials Required</b></p> <p align="center">None</p> <p align="center"><b>NOTE</b></p> <p>If a malfunction occurs during this test, make sure circuit breakers shown in WP008 00 are closed.</p> <p>For locator, refer to WP008 00.</p> <p>For test equipment hookup, refer to WP007 00.</p>		
1. STORES SAFETY INSPECTION (A1-F18AE-LWS-000).		
<p align="center"><b>WARNING</b></p> <p>To prevent injury or death of personnel, all live weapons and explosive cartridges must be removed from aircraft and gun must be safetied before doing this test.</p>		
a. Make sure electrical power is off (A1-F18AC-LMM-000).		
b. Make sure all weapons are removed from aircraft.		
c. Make sure all explosive cartridges are removed from cartridge chambers for all Aircraft Bomb Ejector Racks BRU-32( ) installed on aircraft.		
d. Make sure all explosive cartridges are removed from cartridge chambers for all Aircraft Bomb Ejector Racks BRU-33( ) installed on aircraft.		
e. If installed on aircraft, make sure all explosive cartridges are removed from cartridge chambers on Aircraft Guided Missile Launcher LAU-116A/A AIM-7 fuselage stations.		
f. If installed on aircraft, make sure all explosives are removed from breeches on Multiple Ejector Racks (MER).		

**Table 1. Countermeasures Dispensing System AN/ALE-39 Test (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>g. Make sure gun electrical signal safety switch (aft of door 6) is set to safe (extended) position.</p> <p>h. Make sure gun holdback mechanism handle is set to cleared (gun holdback handle indicator extended).</p> <p>2. PRELIMINARY.</p> <p>a. Remove right and left Dispenser Module D-27/ALE-29A (A1-F18AC-760-300, WP009 00).</p> <p>b. Install the Test Adapters MX-8455/ALM-70A (test adapters) in left and right Dispenser Housing MX-7721/ALE-29A.</p> <p>c. Connect W3 test cable: Connect W3P1 to J3 on the Countermeasures Dispenser Test Set TS-2614/ALM-70 (test set) and W3P2 to the test adapter in the left Dispenser Housing MX-7721/ALE-29A.</p> <p>d. Connect W4 test cable: Connect W4P1 to J4 on the test set and W4P2 to the test adapter in the right Dispenser Housing MX-7721/ALE-29A.</p> <p>e. On proximity switch control, set all switches to NORM.</p> <p>f. Connect proximity switch control cable assembly (A1-F18AC-LMM-000).</p> <p>g. Apply electrical power (A1-F18AC-LMM-000).</p> <p>h. On proximity switch control, set RIGHT MAIN GEAR and NOSE GEAR switches to WT OFF WHL.</p> <p>i. On master arm control panel assembly, set MASTER switch to ARM.</p>		

**Table 1. Countermeasures Dispensing System AN/ALE-39 Test (Continued)**

[illegible]

**Table 1. Countermeasures Dispensing System AN/ALE-39 Test (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
g. On ECM control panel assembly, set MODE SEL switch to SNGL, and set DISPENSER select switch to C.		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.</p>		
h. On programmer, pull RESET switch and set to RESET (hold for 10 seconds minimum).		
i. On ECM control panel assembly, set CHAFF, FLARE, and JAMMER counters to 20 by pressing and turning set knobs.		
j. Press DISP switch, part of DISPENSER select switch.	1. On test set, FIRING CIRCUIT INDICATOR DISPENSER 1 (FCI D1) light 11 comes on and goes off.	Do table 1 (WP009 00).
	2. On ECM control panel assembly, CHAFF counter indicates 19.	Do table 2 (WP009 00).
k. In cockpit above left console, press ECM DISP switch.	FCI D1, light 12 comes on and goes off.	Do table 1 (WP010 00).
l. On ECM control panel assembly, set MODE SEL switch to PRGM.		
m. Press DISP switch, part of DISPENSER select switch.	FCI D1, lights 13 through 28, come on and go off.	1. If all lights do not come on, do table 2 (WP010 00).  2. If one or more but not all lights do not come on, do table 3 (WP010 00).
n. On right throttle grip, push chaff/flare dispenser switch forward and release.	FCI D1, light 29 comes on and goes off.	Do table 4 (WP010 00).
o. On ECM control panel assembly, do the steps below:		
(1) Press DISP switch, part of DISPENSER select switch.	1. FCI D1, light 30 comes on and goes off.	Do table 5 (WP010 00).
	2. On ECM control panel assembly, CHAFF counter indicates 0.	Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00).

**Table 1. Countermeasures Dispensing System AN/ALE-39 Test (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>(2) Set DISPENSER select switch to F/S.</p> <p>(3) Set MODE SEL switch to SNGL.</p> <p>(4) Press DISP switch, part of DISPENSER select switch.</p> <p>(5) Set MODE SEL switch to PRGM.</p> <p>(6) Press DISP switch, part of DISPENSER select switch.</p> <p>(7) Set DISPENSER select switch to F/M.</p> <p>(8) Set MODE SEL switch to SNGL.</p> <p>(9) Press DISP switch, part of DISPENSER select switch.</p> <p>(10) Set MODE SEL switch to PRGM.</p> <p>(11) Press DISP switch, part of DISPENSER select switch.</p> <p>p. On right throttle grip, push chaff/flare dispenser switch aft and release.</p> <p>q. On ECM control panel assembly, do the steps below:</p> <p>(1) Set DISPENSER select switch to J.</p>	<p>1. FCI D1, light 1 comes on and goes off.</p> <p>2. On ECM control panel assembly, FLARE counter indicates 19.</p> <p>On test set, FCI D1, lights 2 through 4 come on and go off.</p> <p>FCI D1, light 5 comes on and goes off and FIRING CIRCUIT INDICATOR DISPENSER 2 (FCI D2) light 1 comes on and goes off.</p> <p>FCI D1, lights 6 through 8 come on and go off. FCI D2, lights 2 through 4 come on and go off.</p> <p>FCI D1, light 9 comes on and goes off. FCI D2, light 5 comes on and goes off.</p>	<p>Do table 1 (WP011 00).</p> <p>Do table 2 (WP011 00).</p> <p>1. If all lights do not come on and FLARE counter did not count down, do table 3 (WP011 00).</p> <p>2. If 1 light does not come on and FLARE counter indicates 16, do table 4 (WP011 00).</p> <p>Do table 5 (WP011 00).</p> <p>Do table 1 (WP012 00).</p> <p>Do table 2 (WP012 00).</p>



**Table 1. Countermeasures Dispensing System AN/ALE-39 Test (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
(2) Set MODE SEL switch to SNGL.		
(3) Press DISP switch, part of DISPENSER select switch.	1. FCI D2, light 11 comes on and goes off.	Do table 3 (WP012 00).
	2. On ECM control panel assembly JAMMER counter indicates 19.	Do table 4 (WP012 00).
(4) Set MODE SEL switch to PRGM.		
(5) Press DISP switch, part of DISPENSER select switch.	FCI D2, lights 12 through 15 come on and go off.	Do table 1 (WP013 00).
(6) Set DISPENSER select switch to S/F PULL.	1. FCI D1, light 10 comes on and goes off. FCI D2, lights 6 through 10 come on and go off.	Do table 2 (WP013 00).
	2. On ECM control panel assembly, FLARE counter indicates 0.	Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00).
(7) Set DISPENSER select switch to J.		
(8) Press DISP switch, part of DISPENSER select switch.	FCI D2, lights 16 through 19 come on and go off.	Do table 3 (WP013 00).
(9) Press DISP switch, part of DISPENSER select switch.	FCI D2, lights 20 through 23 come on and go off.	Do table 4 (WP013 00).
(10) Press DISP switch, part of DISPENSER select switch.	FCI D2, lights 24 through 27 come on and go off.	Do table 5 (WP013 00).
(11) Press DISP switch, part of DISPENSER select switch.	1. FCI D2, lights 28 through 30 come on and go off.	Do table 6 (WP013 00).
	2. On ECM control panel assembly, JAMMER counter indicates 0.	Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00).
<b>NOTE</b>		
Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.		
r. On programmer, pull RESET switch and set to RESET (hold for 10 seconds minimum).		



**Table 1. Countermeasures Dispensing System AN/ALE-39 Test (Continued)**

<b>Procedure</b>	<b>Normal Indication</b>	<b>Remedy for Abnormal Indication</b>
<p>f. Remove W3 and W4 test cables.</p> <p>g. Remove test adapter from left and right Dispenser Housings MX-7721/ALE-29A.</p> <p>h. Install right and left Dispenser Module D-27/ALE-29A (A1-F18AC-760-300, WP009 00).</p> <p>i. On F/A-18A, install EMI cover assembly by pressing velcro tape on cover onto tape on edge of upper equipment bay (A1-F18AC-LMM-000).</p>		

**THIS PAGE INTENTIONALLY LEFT BLANK.**

---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TESTING - FUNCTIONAL TEST USING AN/ALM-225 TEST SET**  
**COUNTERMEASURES DISPENSING SYSTEM**

---

**Reference Material**

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Line Maintenance Access Doors .....	A1-F18AC-LMM-010
Tactical Electronic Warfare Systems .....	A1-F18AC-760-300
Dispenser Module D-27/ALE-29A .....	WP009 00

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
AN/ALM-225 Test Set, Figure 1 .....	10
Table 1. Countermeasures Dispensing System AN/ALE-39 Test .....	1

**Record of Applicable Technical Directives**

None

**Table 1. Countermeasures Dispensing System AN/ALE-39 Test**

<b>Procedure</b>	<b>Normal Indication</b>	<b>Remedy for Abnormal Indication</b>
<b>System Required Components</b>		
All system components installed.		
<b>Related Systems Required</b>		
Electrical System		
Master Arm Control Panel Assembly		
<b>Support Equipment Required</b>		
<b>NOTE</b>		
Alternate item type designations or part numbers are listed in parentheses.		
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>	
74D420030-1001	Proximity Switch Control	
3100404-101-103 (AN/ALM-225)	Countermeasures Dispensing System Test Set	
260-6XLP (AN/USM-311)	Multimeter	

**Table 1. Countermeasures Dispensing System AN/ALE-39 Test (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>Materials Required</b></p> <p align="center">None</p> <p align="center"><b>NOTE</b></p> <p>If a malfunction occurs during this test, make sure circuit breakers shown in WP008 00 are closed.</p> <p>For locator, refer to WP008 00.</p> <p>For test set pulse light configuration, refer to figure 1.</p>		
1. STORES SAFETY INSPECTION (A1-F18AE-LWS-000).		
<p align="center"><b>WARNING</b></p> <p>To prevent injury or death of personnel, all live weapons and explosive cartridges must be removed from aircraft and gun must be safetied before doing this test.</p>		
a. Make sure electrical power is off (A1-F18AC-LMM-000).		
b. Make sure all weapons are removed from aircraft.		
c. Make sure all explosive cartridges are removed from cartridge chambers for all Aircraft Bomb Ejector Racks BRU-32( ) installed on aircraft.		
d. Make sure all explosive cartridges are removed from cartridge chambers for all Aircraft Bomb Ejector Racks BRU-33( ) installed on aircraft.		
e. If installed on aircraft, make sure all explosive cartridges are removed from cartridge chambers on Aircraft Guided Missile Launcher LAU-116A/A AIM-7 fuselage stations.		
f. If installed on aircraft, make sure all explosives are removed from breeches on Multiple Ejector Racks (MER).		

**Table 1. Countermeasures Dispensing System AN/ALE-39 Test (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>g. Make sure gun electrical signal safety switch (aft of door 6) is set to safe (extended) position.</p> <p>h. Make sure gun holdback mechanism handle is set to cleared (gun holdback handle indicator extended).</p> <p>2. PRELIMINARY.</p> <p>a. Make sure electrical power is off (A1-F18AC-LMM-000).</p> <p>b. Remove right and left Dispenser Module D-27/ALE-29A (A1-F18AC-760-300, WP009 00).</p> <p>c. Open Countermeasure Dispensing System Test Set AN/ALM-225 (test set).</p> <p>d. Set SELECT switch to the SAFE ENERGY position.</p> <p>e. Press and hold PUSH TO TEST button, and adjust ENERGY CAL ADJ control until needle on test set (top panel) is at CAL position.</p> <p>f. Release PUSH TO TEST button.</p> <p>g. Close test set.</p> <p>h. Install test set in left Dispenser Housing MX-7721/ALE-29A (left dispenser housing), so that J4 on test set mates plug in left dispenser housing.</p> <p>i. On proximity switch control, set all switches to NORM.</p> <p>j. Connect proximity switch control cable assembly (A1-F18AC-LMM-000).</p>		

**Table 1. Countermeasures Dispensing System AN/ALE-39 Test (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>k. Apply electrical power (A1-F18AC-LMM-000).</p> <p>l. On proximity switch control, set RIGHT MAIN GEAR and NOSE GEAR switches to WT OFF WHL.</p> <p>m. On master arm control panel assembly, set MASTER switch to ARM.</p>		
<div style="border: 2px solid black; padding: 5px; text-align: center; width: fit-content; margin: 10px auto;"><b>WARNING</b></div> <p>To avoid damage to equipment or injury to personnel, make sure all cartridges and stores are removed before selecting OVERRIDE.</p>		
<p>n. In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.</p> <p>3. PROCEDURE.</p> <p>a. On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.</p> <p>b. On F/A-18A, remove EMI cover assembly by separating velcro tape on cover from tape on edge of upper equipment bay (A1-F18AC-LMM-000).</p>	<p>Switch remains in OVERRIDE.</p> <p>Switch remains on (latched).</p>	<p>Do table 1 (A1-F18AC-740-200, WP012 00).</p> <p>1. If switch unlatches in 10 to 30 seconds, apply cooling air to aircraft (A1-F18AC-LMM-000).</p> <p>2. If switches do not remain on, troubleshoot (A1-F18AC-420-200, WP006 00).</p>



**Table 1. Countermeasures Dispensing System AN/ALE-39 Test (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>c. On Programmer MX-9254/ALE-39 (programmer), set switches as listed below:</p> <p>CHAFF B-QTY to 4  CHAFF B-INTV to 1  CHAFF S-QTY to 4  CHAFF S-INTV to 4  FLARE-QTY to 3  LOAD L10 to F  LOAD L20 to C  JAMMER-QTY to 4  JAMMER-INTV to 001  FLARE-INTV to 4  LOAD R10 to F  LOAD R20 to J</p> <p>d. On ECM control panel assembly, set MODE SEL switch to SNGL, and set DISPENSER select switch to C.</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p>Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.</p>		
<p>e. On programmer, pull RESET switch and set to RESET (hold for 10 seconds minimum).</p> <p>f. On ECM control panel assembly, set CHAFF, FLARE, and JAMMER counters to 20 by pressing and turning set knobs.</p> <p>g. On test set, set SELECT switch to the END TO END position.</p>		
<p>h. On ECM control panel assembly, press DISP switch, part of DISPENSER select switch.</p>	<p>1. On test set, pulse light 11 comes on and goes off.</p> <p>2. On ECM control panel assembly, CHAFF counter indicates 19.</p>	<p>Do table 1 (WP009 01).</p> <p>Do table 2 (WP009 01).</p>
<p>i. In cockpit above left console, press ECM DISP switch.</p>	<p>On test set, pulse light 12 comes on and goes off.</p>	<p>Do table 1 (WP010 01).</p>

**Table 1. Countermeasures Dispensing System AN/ALE-39 Test (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>j. On ECM control panel assembly, set MODE SEL switch to PRGM.</p> <p>k. Press DISP switch, part of DISPENSER select switch.</p> <p>l. On right throttle grip, push chaff/flare dispenser switch forward and release.</p> <p>m. On ECM control panel assembly, do the steps below:</p> <p>(1) Press DISP switch, part of DISPENSER select switch.</p> <p>(2) Set DISPENSER select switch to F/S.</p> <p>(3) Set MODE SEL switch to SNGL.</p> <p>(4) Press DISP switch, part of DISPENSER select switch.</p> <p>(5) Set MODE SEL switch to PRGM.</p> <p>(6) Press DISP switch, part of DISPENSER select switch.</p> <p>(7) Set DISPENSER select switch to F/M.</p> <p>(8) Set MODE SEL switch to SNGL.</p>	<p>Pulse lights 13 through 28, come on and go off.</p> <p>Pulse light 29 comes on and goes off.</p> <p>1. Pulse light 30 comes on and goes off.</p> <p>2. On ECM control panel assembly, CHAFF counter indicates 0.</p> <p>1. On test set, pulse light 1 comes on and goes off.</p> <p>2. On ECM control panel assembly, FLARE counter indicates 19.</p> <p>On test set, pulse lights 2 through 4 come and go off.</p>	<p>1. If all pulse lights do not come on, do table 2 (WP010 01).</p> <p>2. If one or more but not all lights fail to come on, do table 3 (WP010 01).</p> <p>Do table 4 (WP010 01).</p> <p>Do table 5 (WP010 01).</p> <p>Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00).</p> <p>Do table 1 (WP011 01).</p> <p>Do table 2 (WP011 01).</p> <p>1. If all pulse lights do not come on and FLARE counter did not count down, do table 3 (WP011 01).</p> <p>2. If 1 pulse light does not come on and FLARE counter indicates 16, do table 4 (WP011 01).</p>

**Table 1. Countermeasures Dispensing System AN/ALE-39 Test (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>(9) Press DISP switch, part of DISPENSER select switch.</p> <p>(10) Set MODE SEL switch to PRGM.</p> <p>(11) Press DISP switch, part of DISPENSER select switch.</p> <p>n. On right throttle grip, push chaff/flare dispenser switch aft and release.</p> <p>o. On ECM control panel assembly, set DISPENSER select switch to S/F PULL.</p> <p>p. Set DISPENSER select switch to OFF.</p> <p>q. On test set, set SELECT switch to SAFE ENERGY position.</p> <p>r. Press and hold PUSH TO TEST button.</p> <p>s. Remove test set from left dispenser housing.</p> <p>t. Install test set in right Dispenser Housing MX-7721/ALE-29A (right dispenser housing), so that J4 on test set mates plug in right dispenser housing.</p> <p>u. On ECM control panel assembly, set DISPENSER select switch to C.</p>	<p>1. Pulse light 5 comes on and goes off.</p> <p>2. On ECM control panel assembly, FLARE counter indicates 14.</p> <p>1. On test set, pulse lights 6 through 8 come on and go off.</p> <p>2. On ECM control panel assembly, FLARE counter indicates 8.</p> <p>1. On test set, pulse light 9 comes on and goes off.</p> <p>2. On ECM control panel assembly, FLARE counter indicates 6.</p> <p>1. On test set, pulse light 10 comes on and goes off.</p> <p>2. After approximately 10 seconds, on ECM control panel assembly, FLARE counter indicates 0.</p> <p>On test set, meter indicates SAFE.</p>	<p>Do table 5 (WP011 01).</p> <p>Do table 1 (WP012 01).</p> <p>Do table 2 (WP012 01).</p> <p>Do table 3 (WP012 01).</p> <p>Replace left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00).</p>

**Table 1. Countermeasures Dispensing System AN/ALE-39 Test (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>NOTE</b></p> <p>Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.</p>		
<p>v. On programmer, pull RESET switch and set to RESET (hold for 10 seconds minimum).</p> <p>w. On ECM control panel assembly, set CHAFF, FLARE, and JAMMER counters to 20 by pressing and turning set knobs.</p> <p>x. On test set, set SELECT switch to the END TO END position.</p> <p>y. On ECM control panel assembly, do the steps below:</p> <p>(1) Set DISPENSER select switch to S/F PULL.</p> <p>(2) Set DISPENSER select switch to J.</p> <p>(3) Set MODE SEL switch to SNGL.</p> <p>(4) Press DISP switch, part of DISPENSER select switch.</p> <p>(5) Set MODE SEL switch to PRGM.</p> <p>(6) Press DISP switch, part of DISPENSER select switch.</p> <p>(7) Press DISP switch, part of DISPENSER select switch.</p> <p>(8) Press DISP switch, part of DISPENSER select switch.</p>	<p>1. On test set, pulse lights 1 through 10 come on and go off.</p> <p>2. On EMC control panel assembly, FLARE counter indicates 0.</p> <p>1. On test set, pulse light 11 comes on and goes off.</p> <p>2. On ECM control panel assembly, JAMMER counter indicates 19.</p> <p>On test set, pulse lights 12 through 15 come on and go off.</p> <p>On test set, pulse lights 16 through 19 come on and go off.</p> <p>On test set, pulse lights 20 through 23 come on and go off.</p>	<p>Do table 4 (WP012 01).</p> <p>Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00).</p> <p>Do table 5 (WP012 01).</p> <p>Do table 6 (WP012 01).</p> <p>Do table 1 (WP013 01).</p> <p>Do table 2 (WP013 01).</p> <p>Do table 3 (WP013 01).</p>

**Table 1. Countermeasures Dispensing System AN/ALE-39 Test (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>(9) Press DISP switch, part of DISPENSER select switch.</p> <p>(10) Press DISP switch, part of DISPENSER select switch.</p> <p>z. On test set, set SELECT switch to the SAFE ENERGY position.</p> <p>aa. Press and hold PUSH TO TEST button.</p> <p>4. FINAL.</p> <p>a. On master arm control panel assembly, set MASTER switch to SAFE.</p> <p>b. On proximity switch control, set RIGHT MAIN GEAR and NOSE GEAR switches to NORM.</p> <p>c. Remove electrical power (A1-F18AC-LMM-000).</p> <p>d. Disconnect proximity switch control cable assembly (A1-F18AC-LMM-000).</p> <p>e. Close door 10L (A1-F18AC-LMM-010).</p> <p>f. Remove test set from right Dispenser Housing MX-7721/ALE-29A.</p> <p>g. Install right and left Dispenser Module D-27/ALE-29A (A1-F18AC-760-300, WP009 00).</p> <p>h. On F/A-18A, install EMI cover assembly by pressing velcro tape on cover onto tape on edge of upper equipment bay (A1-F18AC-LMM-000).</p>	<p>On test set, pulse lights 24 through 27 come on and go off.</p> <p>1. On test set, pulse lights 28 through 30 come on and go off.</p> <p>2. On ECM control panel assembly, JAMMER counter indicates 0.</p> <p>On test set, meter indicates SAFE.</p>	<p>Do table 4 (WP013 01).</p> <p>Do table 5 (WP013 01).</p> <p>Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00).</p> <p>Replace right Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00).</p>

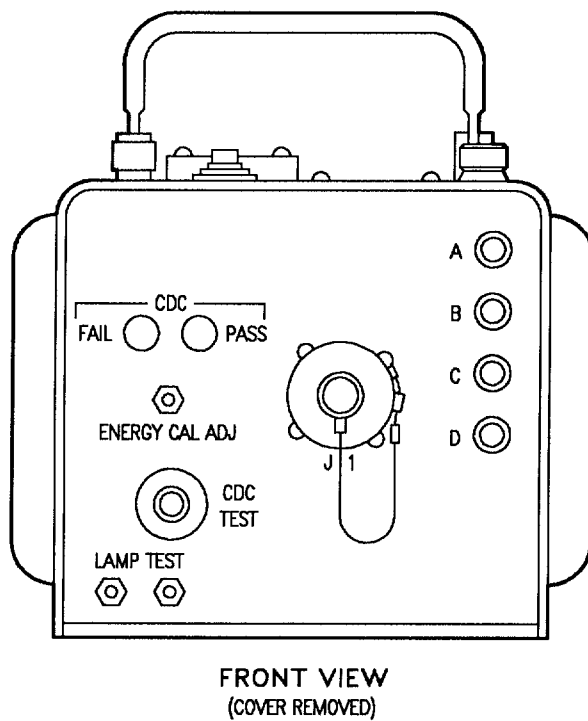
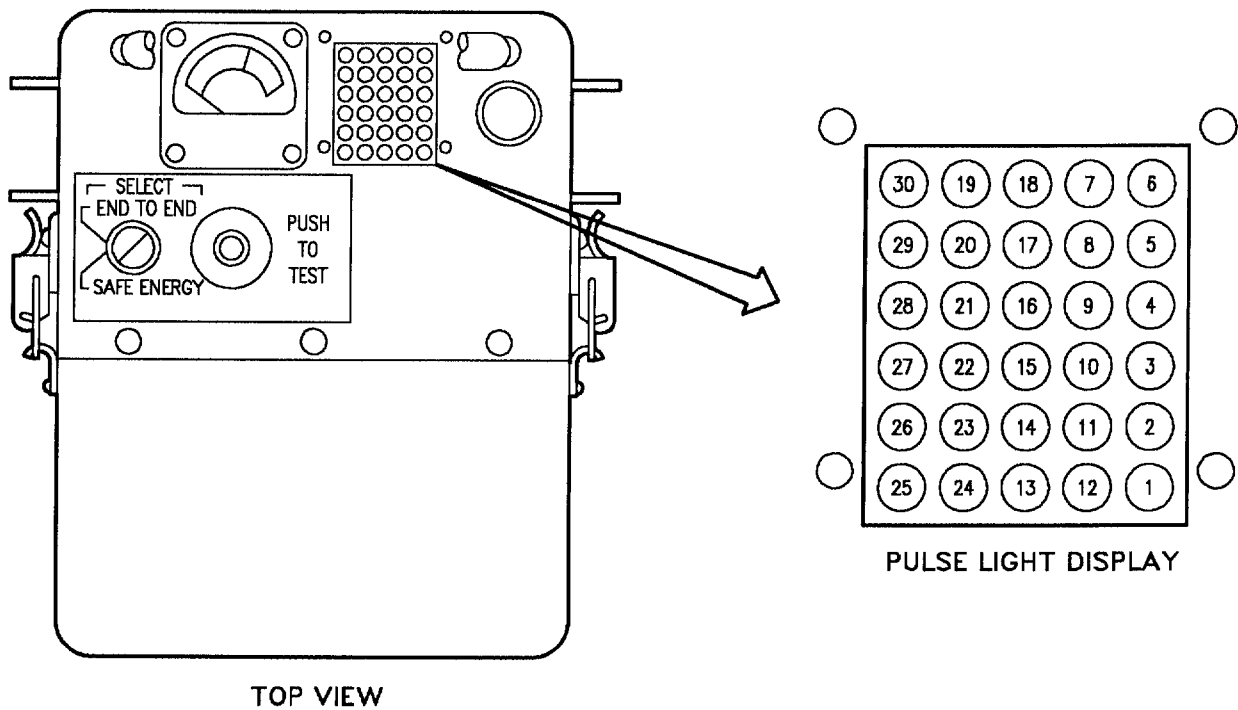


Figure 1. AN/ALM-225 Test Set

---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TESTING - FUNCTIONAL TEST EQUIPMENT HOOKUP**  
**COUNTERMEASURES DISPENSING SYSTEM**

---

**Reference Material**

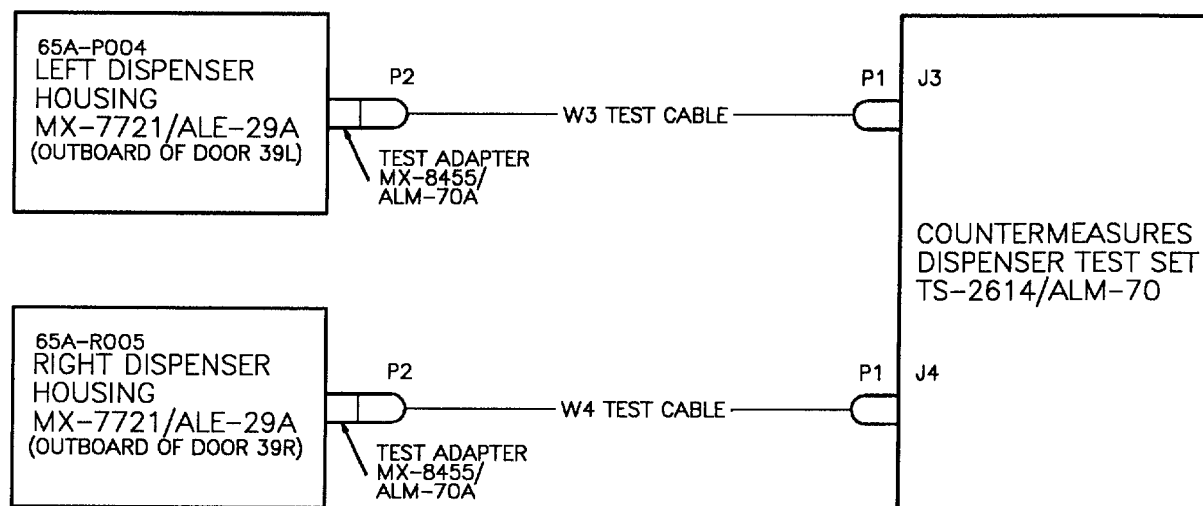
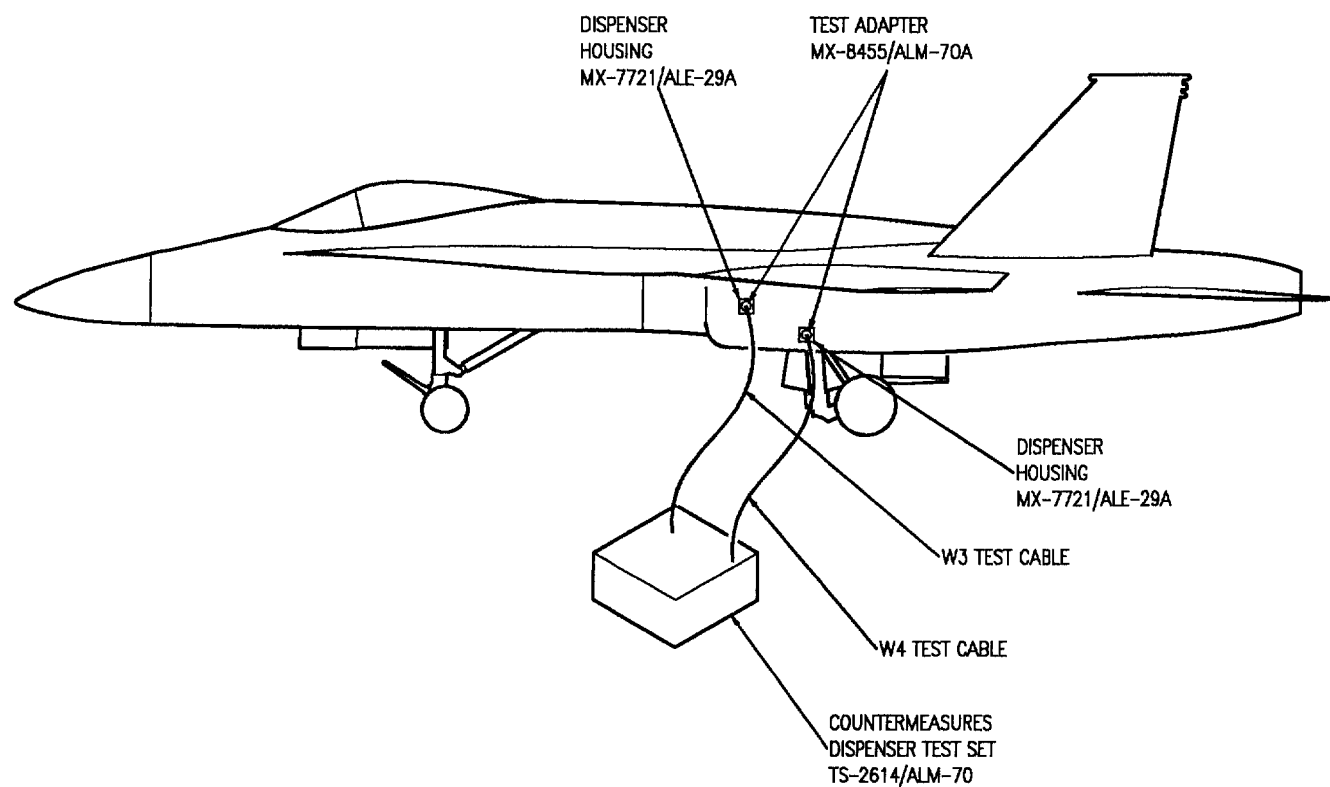
None

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Functional Test Equipment Hookup, Figure 1 .....	2

**Record of Applicable Technical Directives**

None



007001

Figure 1. Functional Test Equipment Hookup



---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**LOCATOR**  
**COUNTERMEASURES DISPENSING SYSTEM**

---

**Reference Material**

None

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Countermeasures Dispensing System Locator, Figure 1 .....	2

**Record of Applicable Technical Directives**

None

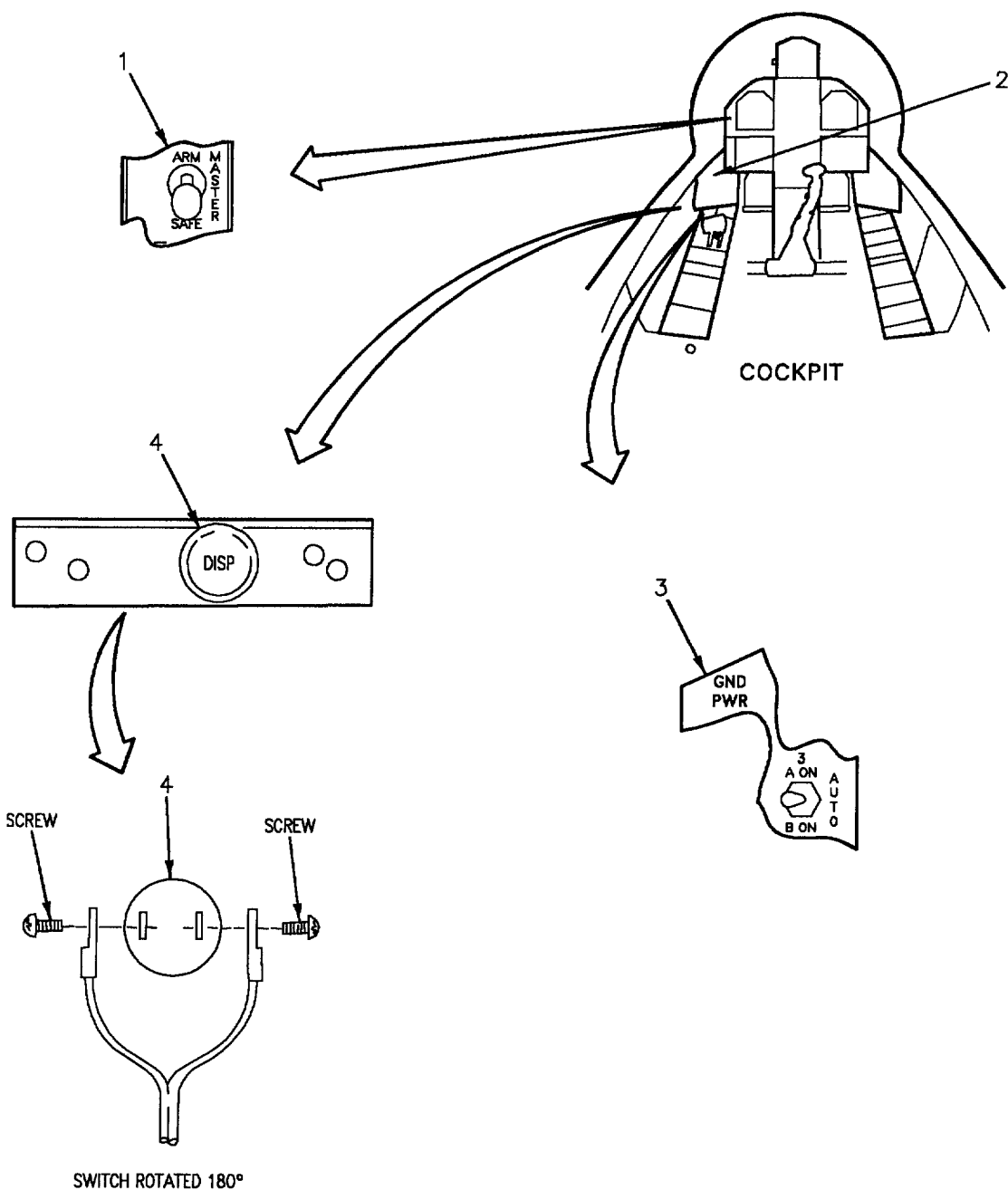


Figure 1. Countermeasures Dispensing System Locator (Sheet 1)

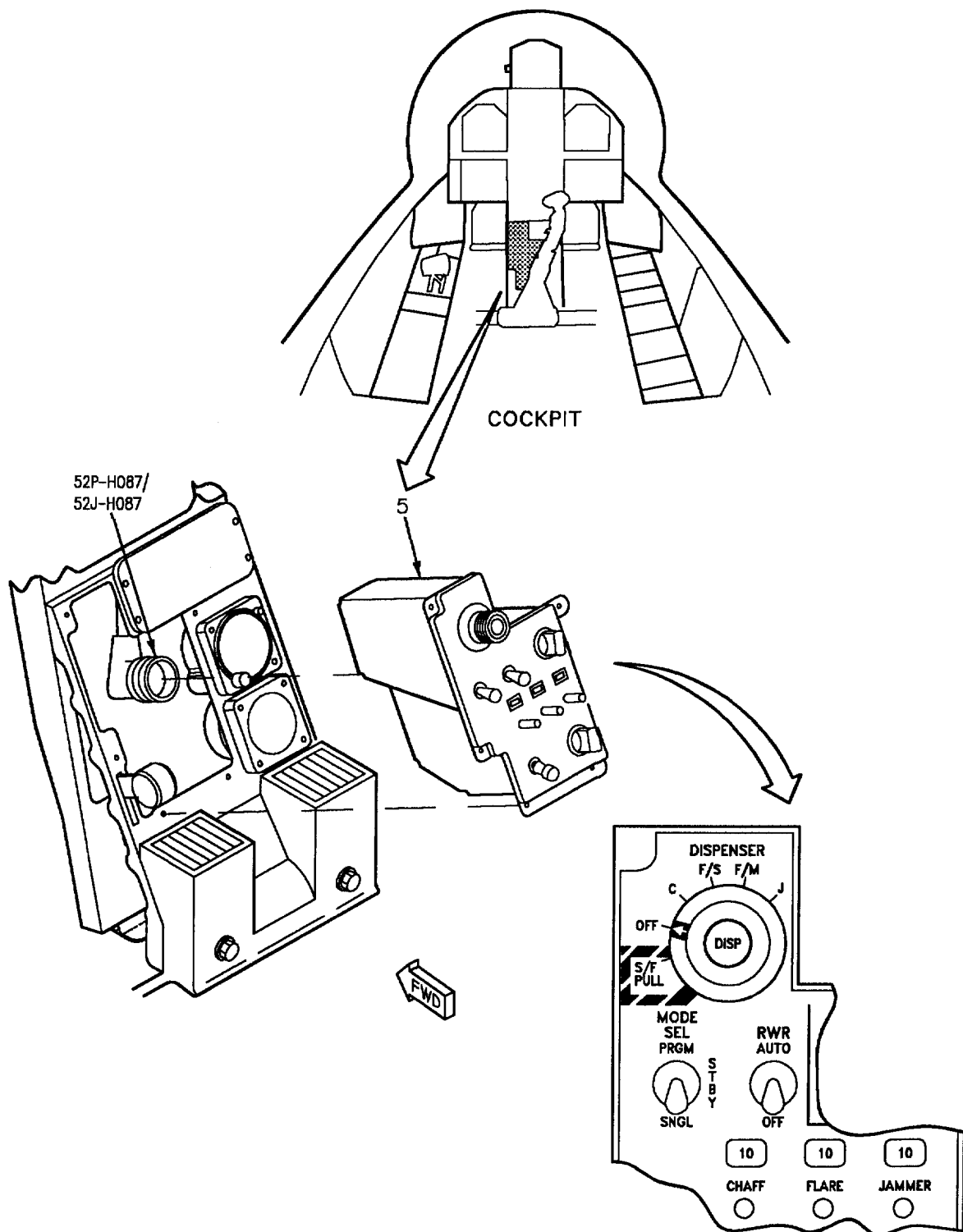


Figure 1. Countermeasures Dispensing System Locator (Sheet 2)

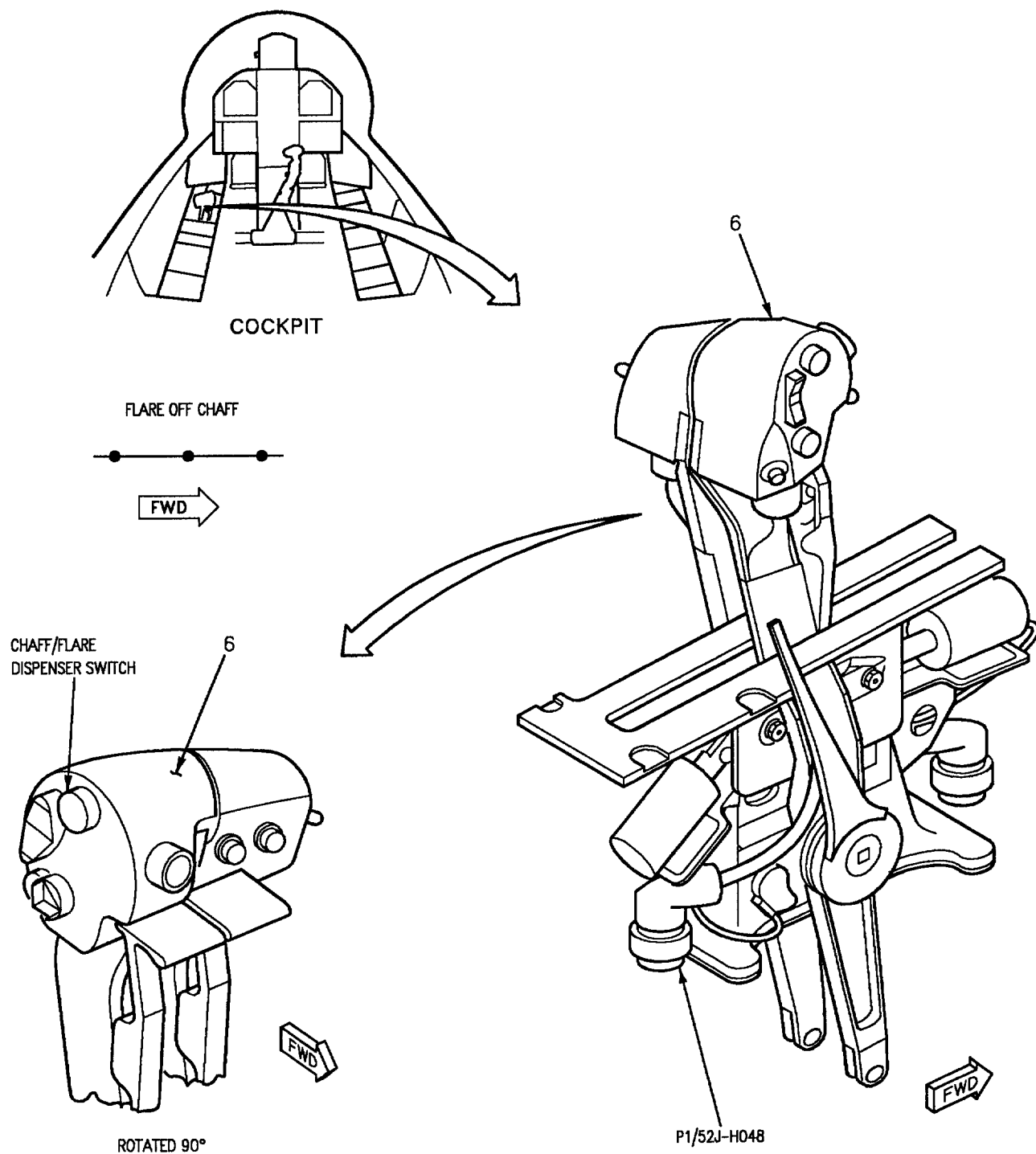


Figure 1. Countermeasures Dispensing System Locator (Sheet 3)

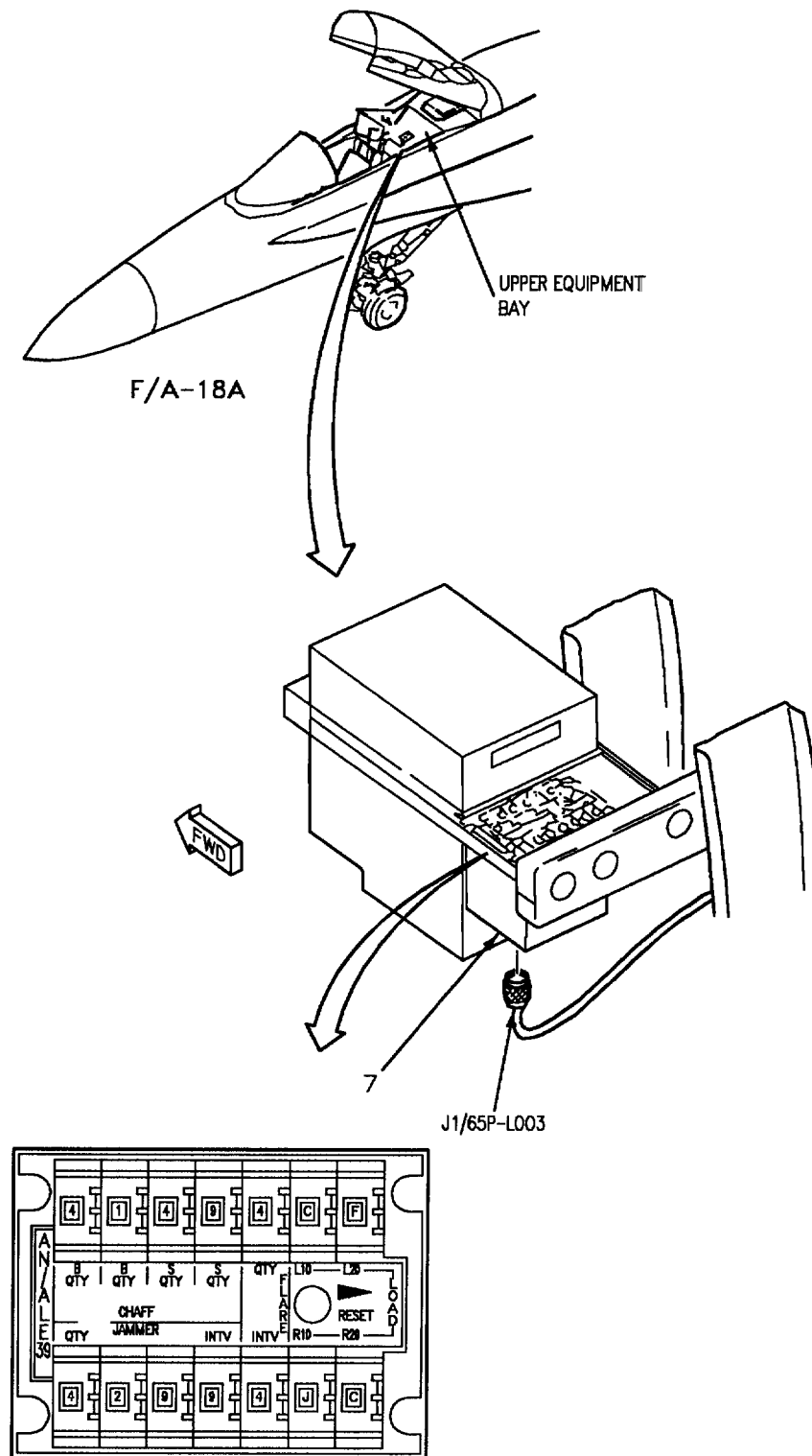
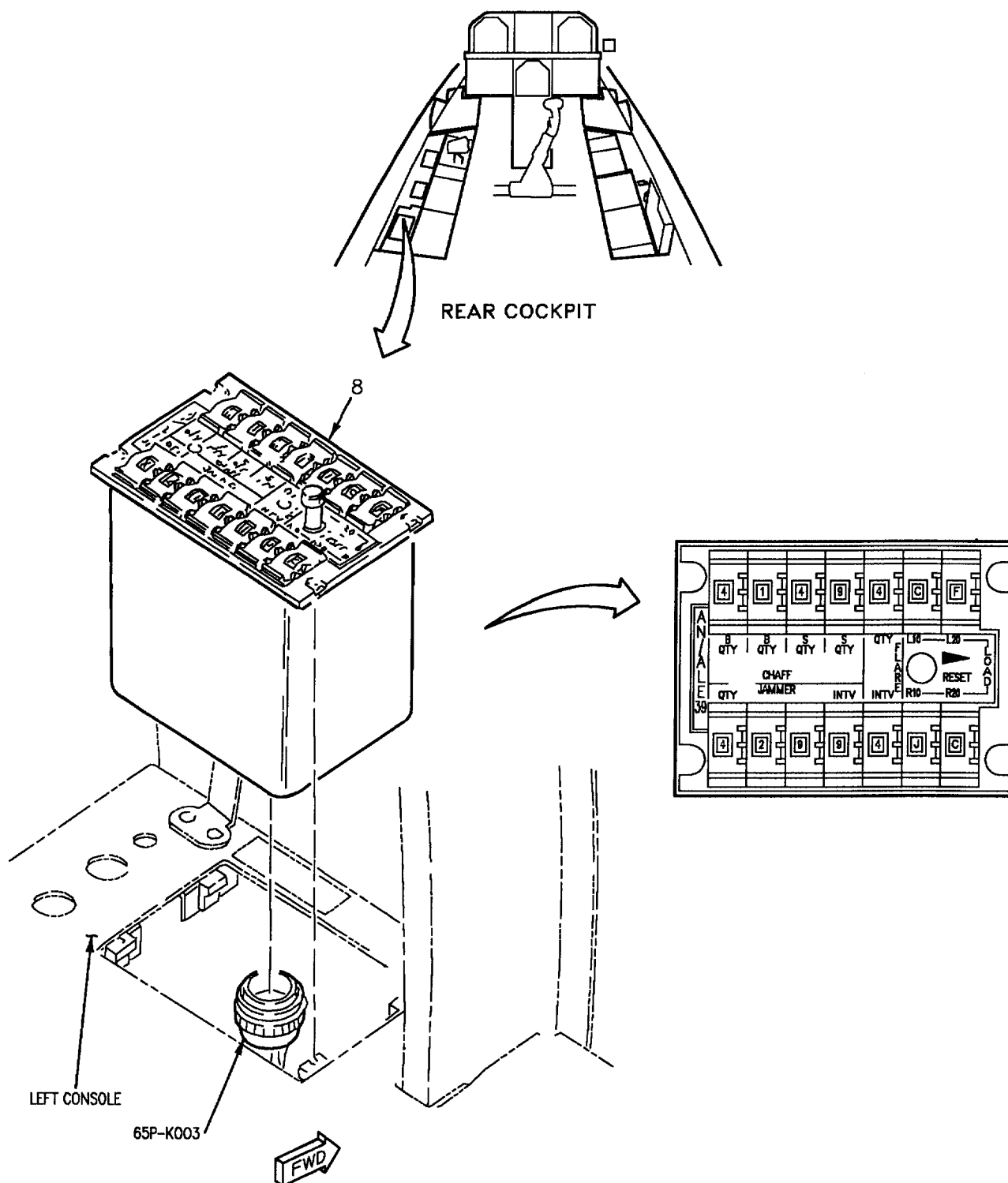
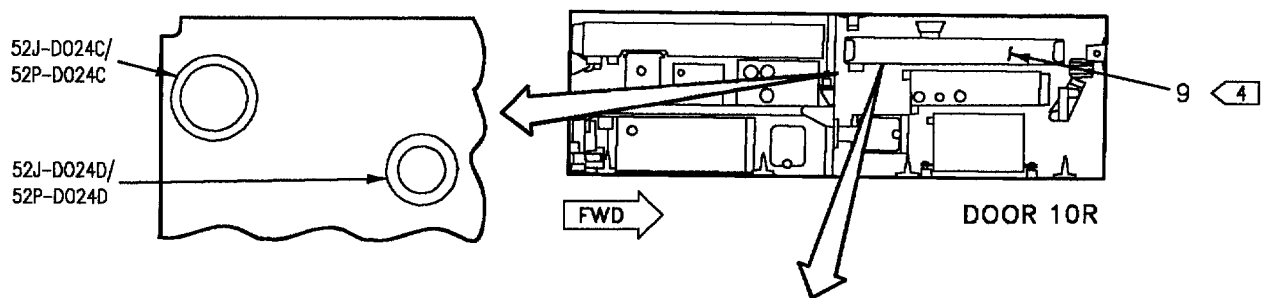


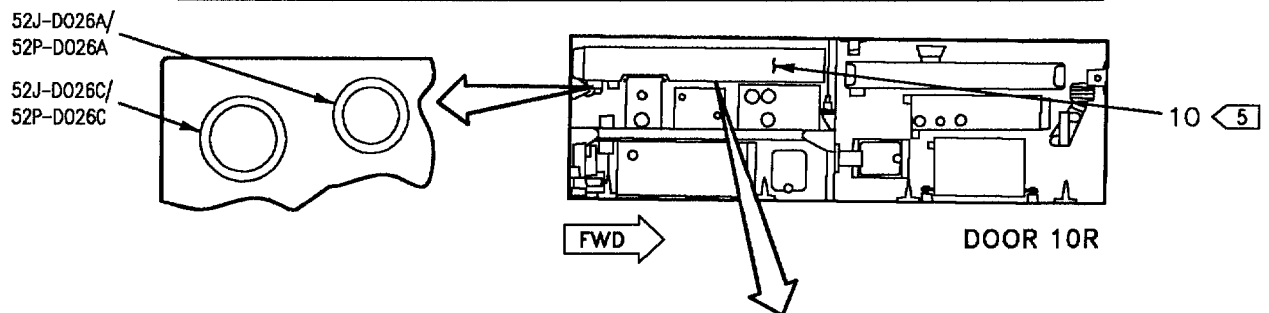
Figure 1. Countermeasures Dispensing System Locator (Sheet 4)



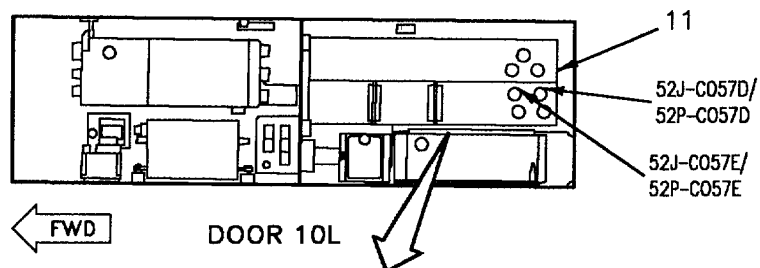
**Figure 1. Countermeasures Dispensing System Locator (Sheet 5)**



4 52A-D024 NO. 2 CIRCUIT BREAKER PANEL ASSEMBLY			
ZONE	REF DES	NOMENCLATURE	BUS
D11	65CBD025	AN/ALE-39 CONT	R 28VDC
D12	65CBD024	AN/ALE-39 PWR	R 28VDC



5 52A-D026 NO. 4 CIRCUIT BREAKER PANEL ASSEMBLY			
ZONE	REF DES	NOMENCLATURE	BUS
A9	65CBD025	AN/ALE-39 CONT	R 28VDC
B9	65CBD024	AN/ALE-39 PWR	R 28VDC



11 52A-C057 NO. 7 CIRCUIT BREAKER/RELAY PANEL ASSEMBLY			
ZONE	REF DES	NOMENCLATURE	BUS
A6	61CBC154	MSTR ARM	L 28VDC

Figure 1. Countermeasures Dispensing System Locator (Sheet 6)

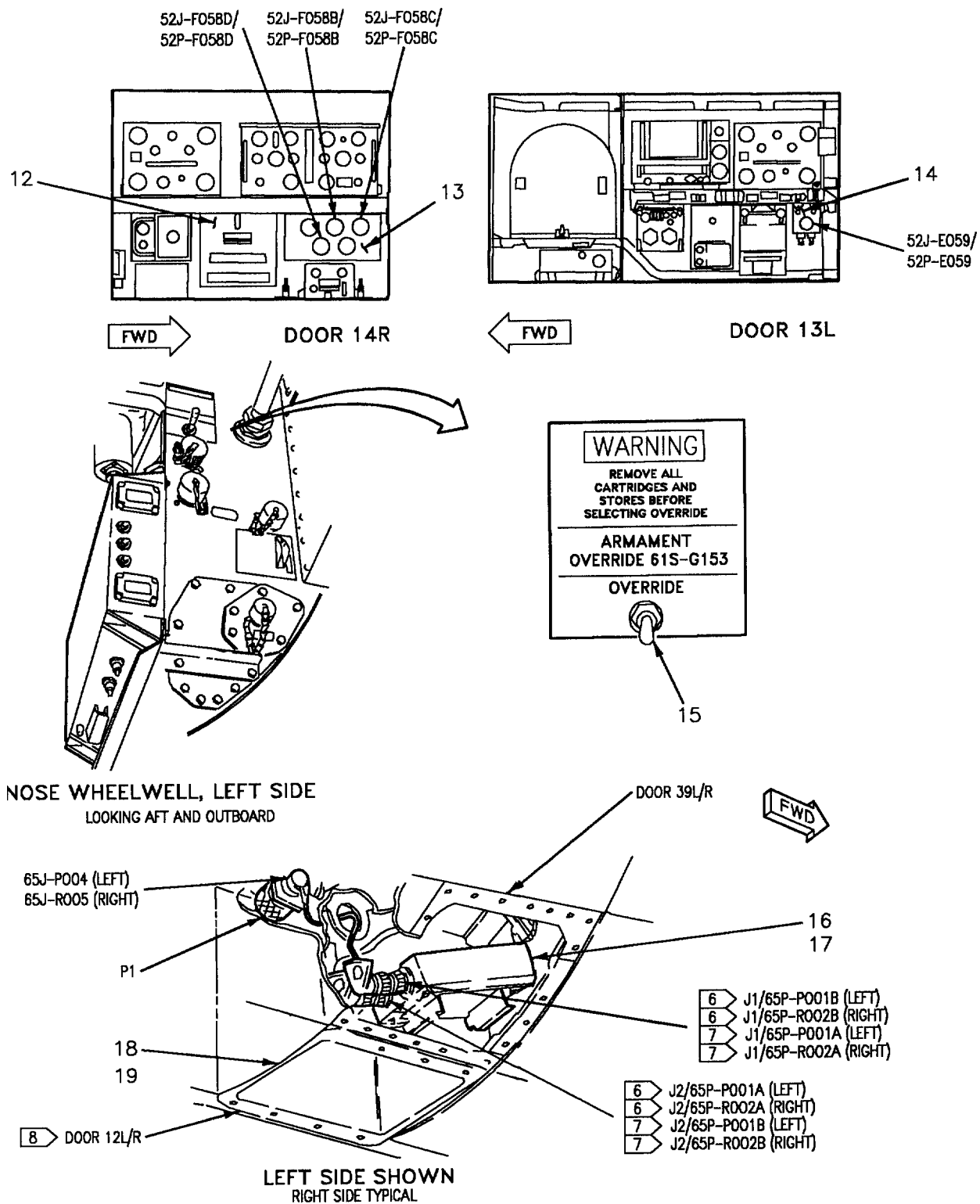


Figure 1. Countermeasures Dispensing System Locator (Sheet 7)



Nomenclature		Index No.	Ref Des
	ARMAMENT COMPUTER CP-1342/AYQ-9(V)	12	61A-F001
	ARMAMENT OVERRIDE SWITCH	15	61S-G153
	ECM CONTROL PANEL ASSEMBLY	5	52A-H087
	ECM DISP SWITCH	4	65S-H027
	GND PWR CONTROL PANEL ASSEMBLY	3	1A-H004
	LDG GEAR CONTROL	2	12A-H008
	LEFT DISPENSER HOUSING MX-7721/ALE-29A	18	65A-P004
	LEFT ELECTRICAL SWITCHING UNIT SA-1874/ALE-39	17	65A-P001
	MASTER ARM CONTROL PANEL ASSEMBLY	1	52A-H075
4	NO. 2 CIRCUIT BREAKER PANEL ASSEMBLY	9	52A-D024
	NO. 2 RELAY PANEL ASSEMBLY	13	52A-F058
	NO. 3 RELAY PANEL ASSEMBLY	14	52A-E059
5	NO. 4 CIRCUIT BREAKER PANEL ASSEMBLY	10	52A-D026
	NO. 7 CIRCUIT BREAKER/RELAY PANEL ASSEMBLY	11	52A-C057
3	PROGRAMMER MX-9254/ALE-39	7	65A-L003
2	PROGRAMMER MX-9254/ALE-39	8	65A-K003
	RIGHT DISPENSER HOUSING MX-7721/ALE-29A	19	65A-R005
	RIGHT ELECTRICAL SWITCHING UNIT SA-1874/ALE-39	16	65A-R002
	RIGHT THROTTLE GRIP	6	52A-H048

### LEGEND

1. Aircraft connector locations are shown in A1-F18A( )-WDM-000.

- 2 F/A-18B.
- 3 F/A-18A.
- 4 161353 thru 161359.
- 5 161360 and up.
- 6 161353 thru 161521.
- 7 161522 and up.
- 8 162826 and up.

**Figure 1. Countermeasures Dispensing System Locator (Sheet 8)**

**THIS PAGE INTENTIONALLY LEFT BLANK.**

---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TROUBLESHOOTING - FUNCTIONAL TEST PART 1 USING AN/ALM-70A TEST SET**  
**COUNTERMEASURES DISPENSING SYSTEM**

---

**Reference Material**

Line Maintenance Procedures ..... A1-F18AC-LMM-000  
Line Maintenance Access Doors ..... A1-F18AC-LMM-010

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Table 1. Test Set FCI D1 Light 11 Does Not Come On .....	1
Table 2. CHAFF Counter Did Not Step to 19 .....	12

**Record of Applicable Technical Directives**

None

**Table 1. Test Set FCI D1 Light 11 Does Not Come On**

<b>Support Equipment Required</b>	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	

Table 1. Test Set FCI D1 Light 11 Does Not Come On (Continued)

<p><b>NOTE</b></p> <p>Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.</p> <p>For locator, see WP008 00.</p> <p>Malfunction is caused by one of the items below:</p> <p>Aircraft Wiring</p> <p>ARMAMENT OVERRIDE Switch</p> <p>ECM Control Panel Assembly</p> <p>Left Dispenser Housing MX-7721/ALE-29A</p> <p>Left Electrical Switching Unit SA-1874/ALE-39</p> <p>Master Arm Control Panel Assembly</p> <p>No. 2 Circuit Breaker Panel Assembly</p> <p>No. 2 Relay Panel Assembly</p> <p>No. 4 Circuit Breaker Panel Assembly</p> <p>No. 7 Circuit Breaker/Relay Panel Assembly</p> <p>Programmer MX-9254/ALE-39</p>														
Procedure	No	Yes												
<p><b>CAUTION</b></p> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p>To prevent damage to aircraft wiring, make sure multimeter leads/jumper wires are installed on correct pins. When electrical power is off, 24vdc battery voltage exists on some pins of connector 52P-C057E.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>1. Pin to pin test per procedural step.</li><li>2. Shorts to ground.</li><li>3. Shorts between surrounding pins on connectors.</li><li>4. Shorts between shield and conductors.</li><li>5. Shield continuity.</li></ol> <table><tr><td>a. On ECM control panel assembly, did CHAFF counter decrease to 19? .....</td><td>b</td><td>v</td></tr><tr><td>b. Do the substeps below:</td><td></td><td></td></tr><tr><td>    (1) On ECM control panel assembly, set DISPENSER select switch to OFF.</td><td></td><td></td></tr><tr><td>    (2) On master arm control panel assembly, set MASTER switch to SAFE.</td><td></td><td></td></tr></table>			a. On ECM control panel assembly, did CHAFF counter decrease to 19? .....	b	v	b. Do the substeps below:			(1) On ECM control panel assembly, set DISPENSER select switch to OFF.			(2) On master arm control panel assembly, set MASTER switch to SAFE.		
a. On ECM control panel assembly, did CHAFF counter decrease to 19? .....	b	v												
b. Do the substeps below:														
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.														
(2) On master arm control panel assembly, set MASTER switch to SAFE.														

**Table 1. Test Set FCI D1 Light 11 Does Not Come On (Continued)**

Procedure	No	Yes
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(6) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(7) Apply electrical power (A1-F18AC-LMM-000).		
(8) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.		
(9) On master arm control assembly, set MASTER switch to ARM.		
(10) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.		
(11) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.		
(12) On ECM control panel assembly, set DISPENSER select switch to C.		
(13) Does 28vdc exist from:		
On F/A-18A, 65P-L003 pin B to 65P-L003 pin D (ground)? .....	c	s
On F/A-18B, 65P-K003 pin B to 65P-K003 pin D (ground)? .....	c	s
c. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Does continuity exist from:		
On F/A-18A, 65P-L003 pin D to aircraft ground? .....	d	e
On F/A-18B, 65P-K003 pin D to aircraft ground? .....	d	e
d. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step ax. ....	-	-
e. Do the substeps below:		
(1) Open door 10L (A1-F18AC-LMM-010).		
(2) Disconnect 52P-C057E from no. 7 circuit breaker/relay panel assembly.		

**Table 1. Test Set FCI D1 Light 11 Does Not Come On (Continued)**

Procedure	No	Yes
(3) Apply electrical power (A1-F18AC-LMM-000).		
(4) On proximity switch control, set NOSE GEAR switch to WT OFF WHLS.		
(5) Does 28vdc exist from 52P-C057E pin 5 to aircraft ground? .....	f	m
f. Do the substeps below:		
(1) On proximity switch control, set NOSE GEAR switch to NORM.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) Open door 14R (A1-F18AC-LMM-010).		
(4) Disconnect 52P-F058B from no. 2 relay panel assembly.		
(5) Apply electrical power (A1-F18AC-LMM-000).		
(6) Does 28vdc exist from 52P-F058B pin 6 to 52P-F058B pin 46 (ground)? .....	g	k
g. Do the substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		
(2) Does continuity exist from 52P-F058B pin 46 to aircraft ground? .....	d	h
h. Do the substeps below:		
(1) Open door 10R (A1-F18AC-LMM-010).		
(2) On 161353 THRU 161359, disconnect 52P-D024D from no. 2 circuit breaker panel assembly.		
On 161360 AND UP, disconnect 52P-D026A from no. 4 circuit breaker panel assembly.		
(3) Does continuity exist from:		
On 161353 THRU 161359 - 52P-D024D pin 17 to 52P-F058B pin 6? .....	d	i
On 161360 AND UP - 52P-D026A pin 12 to 52P-F058B pin 6? .....	d	i
i. Isolate between no. 2 circuit breaker panel assembly wiring and 65CBD025 (A1-F18AC-420-300, WP024 00). Do step ax. ....	-	-
j. Isolate between no. 4 circuit breaker panel assembly wiring and 65CBD025 (A1-F18AC-420-300, WP025 00). Do step ax. ....	-	-
k. Do the substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		
(2) Does continuity exist from 52P-F058B pin 4 to 52P-C057E pin 5? .....	d	l

**Table 1. Test Set FCI D1 Light 11 Does Not Come On (Continued)**

Procedure	No	Yes
l. Isolate between no. 2 relay panel assembly wiring and 12K-F013 (A1-F18AC-420-300, WP032 00). Do step ax. ....	-	-
m. Do the substeps below:		
(1) On proximity switch control, set NOSE GEAR switch to NORM.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) Disconnect 52P-C057D from no. 7 circuit breaker/relay panel assembly.		
(4) On ECM control panel assembly, set DISPENSER select switch to C.		
(5) Does continuity exist from:		
On F/A-18A, 52P-C057D pin 32 to 65P-L003 pin B? .....	n	r
On F/A-18B, 52P-C057D pin 32 to 65P-K003 pin B? .....	n	r
n. Do the substeps below:		
(1) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(2) With DISPENSER select switch set to C, does continuity exist from 52J-H087 pin 23 to 52J-H087 pin 29? .....	o	p
o. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step ax. ....	-	-
p. Does continuity exist from 52P-H087 pin 29 to 52P-C057D pin 32? .....	d	q
q. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) between:		
On F/A-18A, 65P-L003 pin B to 52P-H087 pin 23.		
On F/A-18B, 65P-K003 pin B to 52P-H087 pin 23. Do step ax. ....	-	-
r. Isolate between no. 7 circuit breaker/relay panel assembly wiring and 1K-C076 (A1-F18AC-420-300, WP027 00). Do step ax. ....	-	-
s. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR, and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) On ECM control panel assembly, set DISPENSER select switch to C.		
(6) With DISP switch pressed and held, and multimeter set to the RX1 scale, does continuity exist from:		

**Table 1. Test Set FCI D1 Light 11 Does Not Come On (Continued)**

Procedure	No	Yes
On F/A-18A, 65P-L003 pin U(+) to 65P-L003 pin D(-)? .....	t	u
On F/A-18B, 65P-K003 pin U(+) to 65P-K003 pin D(-)? .....	t	u
t. Do the substeps below:		
(1) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(2) Does continuity exist from:		
On F/A-18A, 52P-H087 pin 14 to 65P-L003 pin U? .....	d	o
On F/A-18B, 52P-H087 pin 14 to 65P-K003 pin U? .....	d	o
u. Replace Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step ax. ...	-	-
v. Do the substeps below:		
(1) On Programmer MX-9254/ALE-39, set L20 to F.		
<b>NOTE</b>		
Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.		
(2) Pull RESET switch and set to RESET (hold for 10 seconds minimum).		
(3) On ECM control panel assembly, set DISPENSER select switch to F/S.		
(4) Press DISP switch. Did FCI D11 light come on? .....	w	u
w. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Open door 39L (A1-F18AC-LMM-010).		
(6) On 161353 THRU 161521, disconnect 65P-P001A from left Electrical Switching Unit SA-1874/ALE-39.		
(7) On 161522 AND UP, disconnect 65P-P001B from left Electrical Switching Unit SA-1874/ALE-39.		
(8) Apply electrical power (A1-F18AC-LMM-000).		
(9) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.		



Table 1. Test Set FCI D1 Light 11 Does Not Come On (Continued)

Procedure	No	Yes
(10) On master arm control panel assembly, set MASTER switch to ARM.		
(11) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.		
(12) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.		
(13) On ECM control panel assembly, set DISPENSER select switch to F/S.		
(14) On Programmer MX-9254/ALE-39, pull RESET switch, set to RESET and hold.		
(15) Does 28vdc exist from 65P-P001A/65P-P001B pin D to 65P-P001A/65P-P001B pin F (ground)? .....	x	z
x. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Does continuity exist from 65P-P001A/65P-P001B pin F to aircraft ground? .....	d	y
y. Do the substeps below:		
(1) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(2) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(3) Does continuity exist from:		
On F/A-18A 161353 THRU 161521, 65P-L003 pin A to 65P-P001A pin D? .....	d	u
On F/A-18A 161522 AND UP, 65P-L003 pin A to 65P-P001B pin D? .....	d	u
On F/A-18B 161354 THRU 161360, 65P-K003 pin A to 65P-P001A pin D? .....	d	u
On F/A-18B 161704 AND UP, 65P-K003 pin A to 65P-P001B pin D? .....	d	u
z. Does 28vdc exist from 65P-P001A/65P-P001B pin B to 65P-P001A/65P-P001B pin F (ground)? .....	aa	ar
aa. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		

**Table 1. Test Set FCI D1 Light 11 Does Not Come On (Continued)**

Procedure	No	Yes
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Open door 14R (A1-F18AC-LMM-010).		
(6) Disconnect 52P-F058D from no. 2 relay panel assembly.		
(7) Apply electrical power (A1-F18AC-LMM-000).		
(8) Does 28vdc exist from 52P-F058D pin e to 52P-F058D pin c (ground)? .....	ab	af
ab. Do the substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		
(2) Does continuity exist from 52P-F058D pin c to aircraft ground? .....	d	ac
ac. Do the substeps below:		
(1) Open door 10R (A1-F18AC-LMM-010).		
(2) On 161353 THRU 161359, disconnect 52P-D024C from no. 2 circuit breaker panel assembly.		
On 161360 AND UP, disconnect 52P-D026C from no. 4 circuit breaker panel assembly.		
(3) Does continuity exist from:		
On 161353 THRU 161359, 52P-D024C pin u to 52P-F058D pin e? .....	d	ad
On 161360 AND UP, 52P-D026C pin v to 52P-F058D pin e? .....	d	ae
ad. Isolate between no. 2 circuit breaker panel assembly wiring and 65CBD024 (A1-F18AC-420-300, WP024 00). Do step ax. ....	-	-
ae. Isolate between no. 4 circuit breaker panel assembly wiring and 65CBD024 (A1-F18AC-420-300, WP025 00). Do step ax. ....	-	-
af. Do the substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		
(2) Does continuity exist from 52P-F058D pin d to 65P-P001A/65P-P001B pin B? .....	d	ag
ag. Do the substeps below:		
(1) Disconnect 52P-F058C from no. 2 relay panel assembly.		
(2) On ECM control panel assembly, set DISPENSER select switch to C.		
(3) Does continuity exist from 52P-F058C pin 56 to 52P-F058C pin 78? .....	ah	aj

**Table 1. Test Set FCI D1 Light 11 Does Not Come On (Continued)**

<b>Procedure</b>	<b>No</b>	<b>Yes</b>
ah. Does continuity exist from 52P-F058C pin 78 to aircraft ground? .....	d	ai
ai. Do the substeps below:		
(1) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(2) Does continuity exist from 52P-F058C pin 56 to 52P-H087 pin 30? .....	d	o
aj. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) Apply electrical power (A1-F18AC-LMM-000).		
(3) On master arm control panel assembly, set MASTER switch to ARM.		
(4) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.		
(5) Does 28vdc exist from 52P-F058C pin 93 to 52P-F058C pin 78 (ground)? .....	ak	aq
ak. Do the substeps below:		
(1) On master arm control panel assembly, set MASTER switch to SAFE.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) Open door 10L (A1-F18AC-LMM-010).		
(4) Disconnect 52P-C057D from no. 7 circuit breaker/relay panel assembly.		
(5) Do applicable part of master arm control panel assembly removal for access to 52P-H075 (A1-F18AC-740-300, WP013 00).		
(6) Disconnect 52P-H075 from master arm control panel assembly.		
(7) With ARMAMENT OVERRIDE switch set and held to OVERRIDE, does continuity exist from 52P-H075 pin 3 to 52P-C057D pin 51? .....	al	am
al. Malfunction has been isolated to ARMAMENT OVERRIDE switch (A1-F18AC-740-300, WP018 00) or aircraft wiring (A1-F18A( )-WDM-000). Do step ax. ....	-	-
am. Does continuity exist from 52P-H075 pin 30 to 52P-F058C pin 93? .....	d	an
an. Do the substeps below:		
(1) On master arm control panel assembly, set MASTER switch to ARM.		
(2) Does continuity exist from 52J-H075 pin 3 to 52J-H075 pin 30? .....	ao	ap
ao. Replace master arm control panel assembly (A1-F18AC-740-300, WP013 00). Do step ax. ....	-	-
ap. Isolate between no. 7 circuit breaker/relay panel assembly wiring and 61CBC154 (A1-F18AC-420-300, WP027 00). Do step ax. ....	-	-

**Table 1. Test Set FCI D1 Light 11 Does Not Come On (Continued)**

Procedure	No	Yes
aq. Isolate between no. 2 relay panel assembly, 65K-F026 and 12K-F062 (A1-F18AC-420-300, WP032 00). Do step ax. ....	-	-
ar. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(6) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(7) Does continuity exist from:		
On F/A-18A, 65P-L003 pin C to 65P-P001A/65P-P001B pin E? .....	d	as
On F/A-18B, 65P-K003 pin C to 65P-P001A/65P-P001B pin E? .....	d	as
as. Do the substeps below:		
(1) Disconnect 65P-P001B/65P-P001A from left Electrical Switching Unit SA-1874/ALE-39.		
(2) Disconnect W3P1 from J3 on test set.		
(3) Does continuity exist from:		
65P-P001B/65P-P001A pin L to W3P1 pin L		
65P-P001B/65P-P001A pin h to W3P1 pin h		
65P-P001B/65P-P001A pin j to W3P1 pin j? .....	at	aw
at. Do the substeps below:		
(1) Disconnect W3P2 from test adapter, and remove test adapter from left Dispenser Housing MX-7721/ALE-29A.		
(2) Remove left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(3) Install test adapter to left Dispenser Housing MX-7721/ALE-29A, and connect W3P2 to test adapter.		
(4) Does continuity exist from:		
P1 pin L to W3P1 pin L		
P1 pin h to W3P1 pin h		
P1 pin j to W3P1 pin j? .....	au	av

**Table 1. Test Set FCI D1 Light 11 Does Not Come On (Continued)**

Procedure	No	Yes
au. Replace left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step ax. ....	-	-
av. Isolate defective aircraft wiring from:  65P-P001B/65P-P001A pin L to 65J-P004 pin L 65P-P001B/65P-P001A pin h to 65J-P004 pin h 65P-P001B/65P-P001A pin j to 65J-P004 pin j  (A1-F18A( )-WDM-000). Do step ax. ....	-	-
aw. Malfunction has been isolated to Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00), or left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step ax. ....	-	-
ax. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:  (1) 52P-D024D (2) 52P-D024C (3) 52P-C057D (4) 52P-F058B (5) 52P-F058C (6) 52P-F058D (7) 52P-C057D (8) 52P-C057E (9) 65P-L003 (10) 65P-P001A (11) 65P-P001B (12) P1 (13) W3P1 (14) W3P2 (15) Master arm control panel (16) ECM control panel assembly (17) Left Dispenser Housing MX-7721/ALE-29A (18) Programmer MX-9254/ALE-39		


**Table 1. Test Set FCI D1 Light 11 Does Not Come On (Continued)**

Procedure	No	Yes
(19) Door 10L		
(20) Door 10R		
(21) Door 14R		
(22) Door 39L		
(23) 52P-D026A		
(24) 52P-D026C .....	-	-

**Table 2. CHAFF Counter Did Not Step to 19**

<b>Support Equipment Required</b>	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-200, WP006 00) may be used with this procedure.	
For locator, see WP008 00.	
Malfunction is caused by one of the items listed below:	
Aircraft Wiring	
ECM Control Panel Assembly	
Programmer MX-9254/ALE-39	

Table 2. CHAFF Counter Did Not Step to 19 (Continued)

Procedure	No	Yes
<div style="text-align: center;">  <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol> </div>		
a. Do the substeps below:		
<div style="text-align: center;"> <p><b>NOTE</b></p> <p>Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.</p> </div>		
(1) On programmer, set LOAD L10 to C, and pull RESET switch and set to RESET (hold for 10 seconds minimum).		
(2) On ECM control panel assembly, press DISP switch. Does CHAFF counter indicate 19? .....	b	e
b. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(6) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(7) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(8) On F/A-18A, does continuity exist between 52P-H087 pin 5 and 65P-L003 pin L? .....	c	d

**Table 2. CHAFF Counter Did Not Step to 19 (Continued)**

Procedure	No	Yes
(9) On F/A-18B, does continuity exist between 52P-H087 pin 5 and 65P-K003 pin L? .....	c	d
c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step f. ....	-	-
d. Malfunction has been isolated to ECM control panel assembly (A1-F18AC-760-300, WP007 00) or Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step f. ....	-	-
e. Replace Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure the items listed are connected, installed, or closed:		
(1) 65P-L003		
(2) Programmer MX-9254/ALE-39		
(3) ECM control panel assembly .....	-	-



---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TROUBLESHOOTING - FUNCTIONAL TEST PART 1 USING AN/ALM-225 TEST SET**  
**COUNTERMEASURES DISPENSING SYSTEM**

---

### Reference Material

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Line Maintenance Access Doors .....	A1-F18AC-LMM-010

### Alphabetical Index

Subject	Page No.
Table 1. Test Set Pulse Light 11 Does Not Come On .....	1
Table 2. CHAFF Counter Did Not Step To 19 .....	13

### Record of Applicable Technical Directives

None

**Table 1. Test Set Pulse Light 11 Does Not Come On**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
Materials Required	
None	

Table 1. Test Set Pulse Light 11 Does Not Come On (Continued)

<p><b>NOTE</b></p> <p>Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.</p> <p>For locator, see WP008 00.</p> <p>Malfunction is caused by one of the items listed below:</p> <p>Aircraft Wiring ARMAMENT OVERRIDE Switch ECM Control Panel Assembly Left Dispenser Housing MX-7721/ALE-29A Left Electrical Switching Unit SA-1874/ALE-39 Master Arm Control Panel Assembly No. 2 Relay Panel Assembly No. 4 Circuit Breaker Panel Assembly No. 7 Circuit Breaker/Relay Panel Assembly Programmer MX-9254/ALE-39</p>		
<b>Procedure</b>	<b>No</b>	<b>Yes</b>
<p><b>CAUTION</b></p> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p>To prevent damage to aircraft wiring, make sure multimeter leads/jumper wires are installed on correct pins. When electrical power is off, 24vdc battery voltage exists on some pins of connector 52P-C057E.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>1. Pin to pin test per procedural step.</li><li>2. Shorts to ground.</li><li>3. Shorts between surrounding pins on connectors.</li><li>4. Shorts between shield and conductors.</li><li>5. Shield continuity.</li></ol>		
a. On ECM control panel assembly, did CHAFF counter decrease to 19? .....	b	v

Table 1. Test Set Pulse Light 11 Does Not Come On (Continued)

Procedure	No	Yes
<p>b. Do the substeps below:</p> <p>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</p> <p>(2) On master arm control panel assembly, set MASTER switch to SAFE.</p> <p>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</p> <p>(4) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(5) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.</p> <p>(6) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).</p> <p>(7) Apply electrical power (A1-F18AC-LMM-000).</p> <p>(8) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.</p> <p>(9) On master arm control assembly, set MASTER switch to ARM.</p> <p>(10) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.</p> <p>(11) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.</p> <p>(12) On ECM control panel assembly, set DISPENSER select switch to C.</p> <p>(13) Does 28vdc exist from:</p> <p>On F/A-18A, 65P-L003 pin B to 65P-L003 pin D (ground)? . . . . .</p> <p>On F/A-18B, 65P-K003 pin B to 65P-K003 pin D (ground)? . . . . .</p>		
<p>c. Do the substeps below:</p> <p>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</p> <p>(2) On master arm control panel assembly, set MASTER switch to SAFE.</p> <p>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR to NORM.</p> <p>(4) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(5) Does continuity exist from:</p> <p>On F/A-18A, 65P-L003 pin D to aircraft ground? . . . . .</p> <p>On F/A-18B, 65P-K003 pin D to aircraft ground? . . . . .</p>		
d. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step av. . . . .	-	-

**Table 1. Test Set Pulse Light 11 Does Not Come On (Continued)**

Procedure	No	Yes
e. Do the substeps below:		
(1) Open door 10L (A1-F18AC-LMM-010).		
(2) Disconnect 52P-C057E from no. 7 circuit breaker/relay panel assembly.		
(3) Apply electrical power (A1-F18AC-LMM-000).		
(4) On proximity switch control, set NOSE GEAR switch to WT OFF WHLS.		
(5) Does 28vdc exist from 52P-C057E pin 5 to aircraft ground? .....	f	m
f. Do the substeps below:		
(1) On proximity switch control, set NOSE GEAR switch to NORM.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) Open door 14R (A1-F18AC-LMM-010).		
(4) Disconnect 52P-F058B from no. 2 relay panel assembly.		
(5) Apply electrical power (A1-F18AC-LMM-000).		
(6) Does 28vdc exist from 52P-F058B pin 6 to 52P-F058B pin 46 (ground)? .....	g	k
g. Do the substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		
(2) Does continuity exist from 52P-F058B pin 46 to aircraft ground? .....	d	h
h. Do the substeps below:		
(1) Open door 10R (A1-F18AC-LMM-010).		
(2) On 161353 THRU 161359, disconnect 52P-D024D from no. 2 circuit breaker panel assembly.		
On 161360 AND UP, disconnect 52P-D026A from no. 4 circuit breaker panel assembly.		
(3) Does continuity exist from:		
On 161353 THRU 161359 - 52P-D024D pin 17 to 52P-F058B pin 6? .....	d	j
On 161360 AND UP - 52P-D026A pin 12 to 52P-F058B pin 6? .....	d	j
i. Isolate between no. 2 circuit breaker panel assembly wiring and 65CBD025 (A1-F18AC-420-300, WP024 00). Do step av. ....	-	-
j. Isolate between no. 4 circuit breaker panel assembly wiring and 65CBD025 (A1-F18AC-420-300, WP025 00). Do step av. ....	-	-

Table 1. Test Set Pulse Light 11 Does Not Come On (Continued)

Procedure	No	Yes
k. Do the substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		
(2) Does continuity exist from 52P-F058B pin 4 to 52P-C057E pin 5? .....	d	l
l. Isolate between no. 2 relay panel assembly wiring and 12K-F013 (A1-F18AC-420-300, WP032 00). Do step av. ....	-	-
m. Do the substeps below:		
(1) On proximity switch control, set NOSE GEAR switch to NORM.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) Disconnect 52P-C057D from no. 7 circuit breaker/relay panel assembly.		
(4) On ECM control panel assembly, set DISPENSER select switch to C.		
(5) Does continuity exist from:		
On F/A-18A, 52P-C057D pin 32 to 65P-L003 pin B? .....	n	r
On F/A-18B, 52P-C057D pin 32 to 65P-K003 pin B? .....	n	r
n. Do the substeps below:		
(1) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(2) With DISPENSER select switch set to C, does continuity exist from 52J-H087 pin 23 to 52J-H087 pin 29? .....	o	p
o. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step av. ....	-	-
p. Does continuity exist from 52P-H087 pin 29 to 52P-C057D pin 32? .....	d	q
q. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) between:		
On F/A-18A, 65P-L003 pin B to 52P-H087 pin 23.		
On F/A-18B, 65P-K003 pin B to 52P-H087 pin 23. Do step av. ....	-	-
r. Isolate between no. 7 circuit breaker/relay panel assembly wiring and 1K-C076 (A1-F18AC-420-300, WP027 00). Do step av. ....	-	-
s. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR, and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		

**Table 1. Test Set Pulse Light 11 Does Not Come On (Continued)**

Procedure	No	Yes
(5) On ECM control panel assembly, set DISPENSER select switch to C.		
(6) With DISP switch pressed and held, and multimeter set to the RX1 scale, does continuity exist from:		
On F/A-18A, 65P-L003 pin U(+) to 65P-L003 pin D(-)? .....	t	u
On F/A-18B, 65P-K003 pin U(+) to 65P-K003 pin D(-)? .....	t	u
t. Do the substeps below:		
(1) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(2) Does continuity exist from:		
On F/A-18A, 52P-H087 pin 14 to 65P-L003 pin U? .....	d	o
On F/A-18B, 52P-H087 pin 14 to 65P-K003 pin U? .....	d	o
u. Replace Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step av. ...	-	-
v. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove test set from left Dispenser Housing MX-7721/ALE-29A.		
(6) Open door 39L (A1-F18AC-LMM-010).		
(7) On 161353 THRU 161521, disconnect 65P-P001A from left Electrical Switching Unit SA-1874/ALE-39.		
(8) On 161522 AND UP, disconnect 65P-P001B from left Electrical Switching Unit SA-1874/ALE-39.		
(9) Open test set and connect W1P1 on test cable W1 to test set connector J1.		
(10) Connect W1P3 to 65P-P001A/65P-P001B.		
(11) Apply electrical power (A1-F18AC-LMM-000).		
(12) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.		
(13) On master arm control panel assembly, set MASTER switch to ARM.		
(14) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.		

**Table 1. Test Set Pulse Light 11 Does Not Come On (Continued)**

Procedure	No	Yes
(15) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.		
(16) On ECM control panel assembly, set DISPENSER select switch to C.		
(17) On Programmer MX-9254/ALE-39, pull RESET switch, set to RESET and hold.		
(18) On test set, does light D come on while RESET switch is in the RESET position? .....	w	ap
w. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Disconnect W1P3 from 65P-P001A/65P-P001B.		
(6) Apply electrical power (A1-F18AC-LMM-000).		
(7) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.		
(8) On master arm control panel assembly, set MASTER switch to ARM.		
(9) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.		
(10) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.		
(11) On ECM control panel assembly, set DISPENSER select switch to C.		
(12) Does 28vdc exist from 65P-P001A/65P-P001B pin B to 65P-P001A/65P-P001B pin F (ground)? .....	x	ao
x. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		

**Table 1. Test Set Pulse Light 11 Does Not Come On (Continued)**

Procedure	No	Yes
(5) Open door 14R (A1-F18AC-LMM-010).		
(6) Disconnect 52P-F058D from no. 2 relay panel assembly.		
(7) Apply electrical power (A1-F18AC-LMM-000).		
(8) Does 28vdc exist from 52P-F058D pin e to 52P-F058A pin c (ground)? .....	y	ac
y. Do the substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		
(2) Does continuity exist from 52P-F058D pin c to aircraft ground? .....	d	z
z. Do the substeps below:		
(1) Open door 10R (A1-F18AC-LMM-010).		
(2) On 161353 THRU 161359, disconnect 52P-D024C from no. 2 circuit breaker panel assembly.		
On 161360 AND UP, disconnect 52P-D026C from no. 4 circuit breaker panel assembly.		
(3) Does continuity exist from:		
On 161353 THRU 161359, 52P-D024C pin u to 52P-F058D pin e? .....	d	aa
On 161360 AND UP, 52P-D026C pin v to 52P-F058D pin e? .....	d	ab
aa. Isolate between no. 2 circuit breaker panel assembly wiring and 65CBD024 (A1-F18AC-420-300, WP024 00). Do step av. ....	-	-
ab. Isolate between no. 4 circuit breaker panel assembly wiring and 65CBD024 (A1-F18AC-420-300, WP025 00). Do step av. ....	-	-
ac. Do the substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		
(2) Does continuity exist from 52P-F058D pin b to 65P-P001A/65P-P001B pin B? .....	d	ad
ad. Do the substeps below:		
(1) Disconnect 52P-F058C from no. 2 relay panel assembly.		
(2) On ECM control panel assembly, set DISPENSER select switch to C.		
(3) Does continuity exist from 52P-F058C pin 56 to 52P-F058C pin 78? .....	ae	ag
ae. Does continuity exist from 52P-F058C pin 78 to aircraft ground? .....	d	af
af. Do the substeps below:		



**Table 1. Test Set Pulse Light 11 Does Not Come On (Continued)**

Procedure	No	Yes
(1) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(2) Does continuity exist from 52P-F058C pin 56 to 52P-H087 pin 30? .....	d	o
ag. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) Apply electrical power (A1-F18AC-LMM-000).		
(3) On master arm control panel assembly, set MASTER switch to ARM.		
(4) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.		
(5) Does 28vdc exist from 52P-F058C pin 93 to 52P-F058C pin 78 (ground)? .....	ah	an
ah. Do the substeps below:		
(1) On master arm control panel assembly, set MASTER switch to SAFE.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) Open door 10L (A1-F18AC-LMM-010).		
(4) Disconnect 52P-C057D from no. 7 circuit breaker/relay panel assembly.		
(5) Do applicable part of master arm control panel assembly removal for access to 52P-H075 (A1-F18AC-740-300, WP013 00).		
(6) Disconnect 52P-H075 from master arm control panel assembly.		
(7) With ARMAMENT OVERRIDE switch set and held to OVERRIDE, does continuity exist from 52P-H075 pin 3 to 52P-C057D pin 51? .....	ai	aj
ai. Malfunction has been isolated to ARMAMENT OVERRIDE switch (A1-F18AC-740-300, WP018 00) or aircraft wiring (A1-F18A( )-WDM-000). Do step av. ....	-	-
aj. Does continuity exist from 52P-H075 pin 30 to 52P-F058C pin 93? .....	d	ak
ak. Do the substeps below:		
(1) On master arm control panel assembly, set MASTER switch to ARM.		
(2) Does continuity exist from 52J-H075 pin 3 to 52J-H075 pin 30? .....	al	am
al. Replace master arm control panel assembly (A1-F18AC-740-300, WP013 00). Do step av. ....	-	-
am. Isolate between no. 7 circuit breaker/relay panel assembly wiring and 61CBC154 (A1-F18AC-420-300, WP027 00). Do step av. ....	-	-
an. Isolate between no. 2 relay panel assembly, 65K-F026 and 12K-F062 (A1-F18AC-420-300, WP032 00). Do step av. ....	-	-
ao. Do the substeps below:		

**Table 1. Test Set Pulse Light 11 Does Not Come On (Continued)**

Procedure	No	Yes
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(6) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(7) Does continuity exist from:		
On F/A-18A, 65P-L003 pin A to 65P-P001A/65P-P001B pin D? .....	d	u
On F/A-18B, 65P-K003 pin A to 65P-P001A/65P-P001B pin D? .....	d	u
ap. On ECM control panel assembly, press DISP switch, part of DISPENSER select switch. On test set, does light C come on and go off? .....	aq	ar
aq. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(6) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(7) Disconnect W1P3 from 65P-P001B.		
(8) Does continuity exist from:		
On F/A-18A, 65P-L003 pin C to 65P-P001A/65P-P001B pin E? .....	d	u
On F/A-18B, 65P-K003 pin C to 65P-P001A/65P-P001B pin E? .....	d	u
ar. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		

**Table 1. Test Set Pulse Light 11 Does Not Come On (Continued)**

Procedure	No	Yes
<p>(4) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(5) Disconnect test cable 1W1 from J1 on test set and 65P-P001A/65P-P001B.</p> <p>(6) On 161353 THRU 161521, connect 65P-P001A to J2 on left Electrical Switching Unit SA-1874/ALE-39.</p> <p>On 161522 AND UP, connect 65P-P001B to J2 on left Electrical Switching Unit SA-1874/ALE-39.</p> <p>(7) On 161353 THRU 161521, disconnect 65P-P001B from J1 on left Electrical Switching Unit SA-1874/ALE-39.</p> <p>On 161522 AND UP, disconnect 65P-P001A from J1 on left Electrical Switching Unit SA-1874/ALE-39.</p> <p>(8) Connect W2P2 on test cable W2 to J4 on test set.</p> <p>(9) Connect W2P1 to J1 on left Electrical Switching Unit SA-1874/ALE-39.</p> <p>(10) Apply electrical power (A1-F18AC-LMM-000).</p> <p>(11) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.</p> <p>(12) On master arm control assembly, set MASTER switch to ARM.</p> <p>(13) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.</p> <p>(14) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.</p> <p>(15) On ECM control panel assembly, set DISPENSER select switch to C.</p>		
<b>NOTE</b>		
Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.		
(16) On Programmer MX-9254/ALE-39, pull RESET switch and set to RESET (hold for 10 seconds minimum).		
(17) On ECM control panel assembly, press DISP switch. Did pulse light 11 on test set come on and go off? .....	as	at
as. Replace left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step av. ....	-	-
at. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		

**Table 1. Test Set Pulse Light 11 Does Not Come On (Continued)**

Procedure	No	Yes
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Disconnect W2P1 from J1 on left Electrical Switching Unit SA-1874/ALE-39.		
(6) Remove left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(7) Does continuity exist from:		
On 161353 THRU 161521, 65P-P001B pin L to 65J-P004 pin L? .....	d	au
On 161522 AND UP, 65P-P001A pin L to 65J-P004 pin L? .....	d	au
au. Replace left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step av. ....	-	-
av. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 52P-C057D		
(2) 52P-F058A		
(3) 52P-F058B		
(4) 52P-F058C		
(5) 52P-C057E		
(6) 52P-D024A		
(7) 52P-D024C		
(8) 65P-L003		
(9) 65P-P001A		
(10) 65P-P001B		
(11) 52P-D026A		
(12) 52P-D026C		
(13) Master arm control panel		
(14) ECM control panel assembly		
(15) Left Dispenser Housing MX-7721/ALE-29A		
(16) Programmer MX-9254/ALE-39		
(17) Door 10L		
(18) Door 10R		
(19) Door 14R		
(20) Door 39L .....	-	-

Table 2. CHAFF Counter Did Not Step to 19

Support Equipment Required						
<div>NOTE</div> <p>Alternate item type designations or part numbers are listed in parentheses.</p> <table><tr><th>Part Number or Type Designation</th><th>Nomenclature</th></tr><tr><td>260-6XLP (AN/USM-311)</td><td>Multimeter</td></tr></table> <div>Materials Required</div> <p>None</p> <div>NOTE</div> <p>Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.</p> <p>For locator, see WP008 00.</p> <p>Malfunction is caused by one of the items listed below:</p> <p>Aircraft Wiring ECM Control Panel Assembly Programmer MX-9254/ALE-39</p>			Part Number or Type Designation	Nomenclature	260-6XLP (AN/USM-311)	Multimeter
Part Number or Type Designation	Nomenclature					
260-6XLP (AN/USM-311)	Multimeter					
Procedure	No	Yes				
<div>CAUTION</div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <div>NOTE</div> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>Pin to pin test per procedural step.</li><li>Shorts to ground.</li><li>Shorts between surrounding pins on connectors.</li><li>Shorts between shield and conductors.</li><li>Shield continuity.</li></ol> <p>a. Do the substeps below:</p> <div>NOTE</div> <p>Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.</p> <p>(1) On programmer, set LOAD L10 to C, and pull RESET switch and set to RESET (hold for 10 seconds minimum).</p>						

**Table 2. CHAFF Counter Did Not Step to 19 (Continued)**

Procedure	No	Yes
(2) On ECM control panel assembly, press DISP switch. Does CHAFF counter indicate 19? .....	b	e
b. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(6) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(7) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(8) On F/A-18A, does continuity exist between 52P-H087 pin 5 and 65P-L003 pin L? .....	c	d
(9) On F/A-18B, does continuity exist between 52P-H087 pin 5 and 65P-K003 pin L? .....	c	d
c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step f. ....	-	-
d. Malfunction has been isolated to ECM control panel assembly (A1-F18AC-760-300, WP007 00) or Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step f. ....	-	-
e. Replace Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure the items listed are connected, installed, or closed:		
(1) 65P-L003		
(2) Programmer MX-9254/ALE-39		
(3) ECM control panel assembly .....	-	-

---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TROUBLESHOOTING - FUNCTIONAL TEST PART 2 USING AN/ALM-70A TEST SET**  
**COUNTERMEASURES DISPENSING SYSTEM**

---

**Reference Material**

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Line Maintenance Access Doors .....	A1-F18AC-LMM-010

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Table 1. Test Set FCI D1 Light 12 Does Not Come On .....	1
Table 2. Test Set FCI D1 Lights 13 Through 18 Do Not Come On .....	4
Table 3. FCI D1 Light(s) Do Not Come On During Programmed Chaff Test .....	6
Table 4. Test Set FCI D1 Light 29 Does Not Come On .....	9
Table 5. Test Set FCI D1 Light 30 Does Not Come On .....	12

**Record of Applicable Technical Directives**

None

**Table 1. Test Set FCI D1 Light 12 Does Not Come On**

<b>Support Equipment Required</b>	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	

Table 1. Test Set FCI D1 Light 12 Does Not Come On (Continued)

<div>NOTE</div> <div>Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.</div> <div>For locator, see WP008 00.</div> <div>Malfunction is caused by one of the items listed below:</div> <div>Aircraft Wiring</div> <div>ECM Control Panel Assembly</div> <div>ECM DISP Switch</div> <div>Left Dispenser Housing MX-7721/ALE-29A</div> <div>Left Electrical Switching Unit SA-1874/ALE-39</div>		
Procedure	No	Yes
<div>CAUTION</div> <div>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</div> <div>NOTE</div> <div>The question used in logic tree “Does continuity exist” means to test for the items listed below:</div> <div><div>1. Pin to pin test per procedural step.</div><div>2. Shorts to ground.</div><div>3. Shorts between surrounding pins on connectors.</div><div>4. Shorts between shield and conductors.</div><div>5. Shield continuity.</div></div> <div>a. Do the substeps below:</div> <div>NOTE</div> <div>Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.</div> <div><div>(1) On Programmer MX-9254/ALE-39, pull RESET switch and set to RESET (hold for 10 seconds minimum).</div><div>(2) In cockpit above left console, press ECM DISP switch.</div><div>(3) On test set, did FCI D1 light 11 come on? .....</div></div> <div>b. Do the substeps below:</div> <div>(1) On ECM control panel, set DISPENSER select switch to OFF.</div>		
	g	b



**Table 1. Test Set FCI D1 Light 12 Does Not Come On (Continued)**

Procedure	No	Yes
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Open door 39L (A1-F18AC-LMM-010).		
(6) On 161353 THRU 161521, disconnect 65P-P001B from left Electrical Switching Unit SA-1874/ALE-39.		
(7) On 161522 AND UP, disconnect 65P-P001A from left Electrical Switching Unit SA-1874/ALE-39.		
(8) Disconnect W3P1 from J3 on test set.		
(9) Does continuity exist from 65P-P001B/65P-P001A pin M to W3P1 pin M? .....	c	f
c. Do the substeps below:		
(1) Disconnect W3P2 from test adapter, and remove test adapter from left Dispenser Housing MX-7721/ALE-29A.		
(2) Remove left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(3) Install test adapter in left Dispenser Housing MX-7721/ALE-29A and connect W3P2 to test adapter.		
(4) Does continuity exist from P1 pin M to W3P1 pin M? .....	d	e
d. Replace left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step 1. ....	-	-
e. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) from 65P-P001B/65P-P001A pin M to 65J-P004 pin M. Do step 1. ....	-	-
f. Replace left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step 1. ....	-	-
g. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		


**Table 1. Test Set FCI D1 Light 12 Does Not Come On (Continued)**

Procedure	No	Yes
(6) Above left console, press and hold ECM DISP switch. Does continuity exist from 52P-H087 pin 44 to 52P-H087 pin 37? .....	h	k
h. Do the substeps below:		
(1) Remove ECM DISP switch (A1-F18AC-760-300, WP008 00).		
(2) With ECM DISP switch pressed and held, does continuity exist between terminals on ECM DISP switch? .....	i	j
i. Replace ECM DISP switch (A1-F18AC-760-300, WP008 00). Do step 1. ....	-	-
j. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) from 52P-H087 to ECM DISP switch. Do step 1. ....	-	-
k. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step 1. ....	-	-
l. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-P001B/65P-P001A		
(2) 65J-P004		
(3) Left Dispenser Housing MX-7721/ALE-29A		
(4) ECM control panel assembly		
(5) ECM DISP switch		
(6) Close door 39L .....	-	-

**Table 2. Test Set FCI D1 Lights 13 Through 18 Do Not Come On**

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
Materials Required	
None	

**Table 2. Test Set FCI D1 Lights 13 Through 18 Do Not Come On (Continued)**

NOTE		
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.		
For locator, see WP008 00.		
Malfunction is caused by one of the items listed below:		
Aircraft Wiring ECM Control Panel Assembly Programmer MX-9254/ALE-39		
Procedure	No	Yes
<div style="text-align: center;">  </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <div style="text-align: center;">NOTE</div> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
a. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(6) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(7) On ECM control panel assembly, set DISPENSER select switch to C.		
(8) With DISP switch pressed and held, and multimeter set to the RX1 scale, does continuity exist from:		
On F/A-18A, 65P-L003 pin J (+) to 65P-L003 pin D (-)? .....	b	e


**Table 2. Test Set FCI D1 Lights 13 Through 18 Do Not Come On (Continued)**

Procedure	No	Yes
On F/A-18B, 65P-K003 pin J (+) to 65P-K003 pin D (-)? .....	b	e
b. Do the substeps below:		
(1) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(2) On F/A-18A, does continuity exist from 52P-H087 pin 21 to 65P-L003 pin J? .....	c	d
(3) On F/A-18B, does continuity exist from 52P-H087 pin 21 to 65P-K003 pin J? .....	c	d
c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step f. ....	-	-
d. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step f. ....	-	-
e. Replace Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-L003		
(2) Programmer MX-9254/ALE-39		
(3) ECM control panel assembly .....	-	-

**Table 3. FCI D1 Light(s) Do Not Come On During Programmed Chaff Test**

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
Materials Required	
None	
NOTE	
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.	
For locator, see WP008 00.	
Malfunction is caused by one of the items listed below:	
Aircraft Wiring	
Left Dispenser Housing MX-7721/ALE-29A	
Left Electrical Switching Unit SA-1874/ALE-39	

**Table 3. FCI D1 Light(s) Do Not Come On During Programmed Chaff Test  
(Continued)**

Procedure	No	Yes
<div style="text-align: center;">  <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol> </div>		
<p>a. Do the substeps below:</p> <ol style="list-style-type: none"> <li>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</li> <li>(2) On master arm control panel assembly, set MASTER switch to SAFE.</li> <li>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</li> <li>(4) Remove electrical power (A1-F18AC-LMM-000).</li> <li>(5) Disconnect W3P1 from J3 on test set.</li> <li>(6) Open door 39L (A1-F18AC-LMM-010).</li> <li>(7) On 161353 THRU 161521, disconnect 65P-P001B from left Electrical Switching Unit SA-1874/ALE-39.</li> <li>(8) On 161522 AND UP, disconnect 65P-P001A from left Electrical Switching Unit SA-1874/ALE-39.</li> <li>(9) Does continuity exist from: <ul style="list-style-type: none"> <li>W3P1 pin N to 65P-P001B/65P-P001A pin N</li> <li>W3P1 pin P to 65P-P001B/65P-P001A pin P</li> <li>W3P1 pin R to 65P-P001B/65P-P001A pin R</li> <li>W3P1 pin S to 65P-P001B/65P-P001A pin S</li> <li>W3P1 pin T to 65P-P001B/65P-P001A pin T</li> <li>W3P1 pin U to 65P-P001B/65P-P001A pin U</li> <li>W3P1 pin V to 65P-P001B/65P-P001A pin V</li> <li>W3P1 pin W to 65P-P001B/65P-P001A pin W</li> <li>W3P1 pin X to 65P-P001B/65P-P001A pin X</li> <li>W3P1 pin Y to 65P-P001B/65P-P001A pin Y</li> <li>W3P1 pin Z to 65P-P001B/65P-P001A pin Z</li> <li>W3P1 pin a to 65P-P001B/65P-P001A pin a</li> </ul> </li> </ol>		

**Table 3. FCI D1 Light(s) Do Not Come On During Programmed Chaff Test  
(Continued)**

Procedure	No	Yes
W3P1 pin b to 65P-P001B/65P-P001A pin b W3P1 pin c to 65P-P001B/65P-P001A pin c W3P1 pin d to 65P-P001B/65P-P001A pin d W3P1 pin e to 65P-P001B/65P-P001A pin e? .....	b	e
b. Do the substeps below: <ol style="list-style-type: none"> <li>(1) Disconnect W3P2 from test adapter, and remove test adapter from left Dispenser Housing MX-7721/ALE-29A.</li> <li>(2) Remove left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).</li> <li>(3) Install test adapter in left Dispenser Housing MX-7721/ALE-29A, and connect W3P2 to test adapter.</li> <li>(4) Does continuity exist from: <div> W3P1 pin N to P1 pin N  W3P1 pin P to P1 pin P  W3P1 pin R to P1 pin R  W3P1 pin S to P1 pin S  W3P1 pin T to P1 pin T  W3P1 pin U to P1 pin U  W3P1 pin V to P1 pin V  W3P1 pin W to P1 pin W  W3P1 pin X to P1 pin X  W3P1 pin Y to P1 pin Y  W3P1 pin Z to P1 pin Z  W3P1 pin a to P1 pin a  W3P1 pin b to P1 pin b  W3P1 pin c to P1 pin c  W3P1 pin d to P1 pin d  W3P1 pin e to P1 pin e? ..... </div> </li> </ol>	d	c
c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) from: <div> 65P-P001B/65P-P001A pin N to 65J-P004 pin N  65P-P001B/65P-P001A pin P to 65J-P004 pin P  65P-P001B/65P-P001A pin R to 65J-P004 pin R  65P-P001B/65P-P001A pin S to 65J-P004 pin S  65P-P001B/65P-P001A pin T to 65J-P004 pin T  65P-P001B/65P-P001A pin U to 65J-P004 pin U  65P-P001B/65P-P001A pin V to 65J-P004 pin V  65P-P001B/65P-P001A pin W to 65J-P004 pin W  65P-P001B/65P-P001A pin X to 65J-P004 pin X  65P-P001B/65P-P001A pin Y to 65J-P004 pin Y  65P-P001B/65P-P001A pin Z to 65J-P004 pin Z  65P-P001B/65P-P001A pin a to 65J-P004 pin a </div>		


**Table 3. FCI D1 Light(s) Do Not Come On During Programmed Chaff Test  
(Continued)**

Procedure	No	Yes
65P-P001B/65P-P001A pin b to 65J-P004 pin b 65P-P001B/65P-P001A pin c to 65J-P004 pin c 65P-P001B/65P-P001A pin d to 65J-P004 pin d 65P-P001B/65P-P001A pin e to 65J-P004 pin e. Do step f. ....	-	-
d. Replace left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step f. ....	-	-
e. Replace left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-P001B/65P-P001A		
(2) Left Dispenser Housing MX-7721/ALE-29A		
(3) 65P-L003		
(4) Door 39L		
(5) W3P1 .....	-	-

**Table 4. Test Set FCI D1 Light 29 Does Not Come On**

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
Materials Required	
None	

**Table 4. Test Set FCI D1 Light 29 Does Not Come On (Continued)**

NOTE		
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.		
For locator, see WP008 00.		
Malfunction is caused by one of the items listed below:		
Aircraft Wiring Right Throttle Grip Left Dispenser Housing MX-7721/ALE-29 Left Electrical Switching Unit SA-1874/ALE-39		
Procedure	No	Yes
<div style="text-align: center;">  </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <div style="text-align: center;">NOTE</div> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
a. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Disconnect W3P1 from J3 on test set.		
(6) Open door 39L (A1-F18AC-LMM-010).		
(7) On 161353 THRU 161521, disconnect 65P-P001B from left Electrical Switching Unit SA-1874/ALE-39.		



**Table 4. Test Set FCI D1 Light 29 Does Not Come On (Continued)**

Procedure	No	Yes
(8) On 161522 AND UP, disconnect 65P-P001A from left Electrical Switching Unit SA-1874/ALE-39.		
(9) Does continuity exist from 65P-P001B/65P-P001A pin f to W3P1 pin f? .....	b	e
b. Do the substeps below:		
(1) Disconnect W3P2 from test adapter, and remove test adapter from left Dispenser Housing MX-7721/ALE-29A.		
(2) Remove left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(3) Install test adapter in left Dispenser Housing MX-7721/ALE-29A and connect W3P2 to test adapter.		
(4) Does continuity exist from P1 pin f to W3P1 pin f? .....	d	c
c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) from 65J-P004 pin f to 65P-P001B/65P-P001A pin f. Do step k. ....	-	-
d. Replace left Dispenser Housing MX-7721/ALE-29 (A1-F18AC-760-300, WP005 00). Do step k. ....	-	-
e. Do the substeps below:		
(1) Do applicable part of right throttle grip removal for access to 52J-H048 (A1-F18AC-270-300, WP088 00).		
(2) Disconnect P1 from 52J-H048.		
(3) Does continuity exist from P1 pin 22 to P1 pin 23 with chaff/flare dispenser switch pushed forward? .....	f	g
f. Replace right throttle grip (A1-F18AC-270-300, WP088 00). Do step k. ....	-	-
g. Do the substeps below:		
(1) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(2) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(3) On F/A-18A, does continuity exist from 52J-H048 pin 22 to 65P-L003 pin U? .....	i	h
(4) On F/A-18B, does continuity exist from 52J-H048 pin 22 to 65P-K003 pin U? .....	i	h
h. Does continuity exist from:		
(1) On F/A-18A, 52J-H048 pin 23 to 65P-L003 pin D? .....	i	j
(2) On F/A-18B, 52J-H048 pin 23 to 65P-K003 pin D? .....	i	j
i. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step k. ....	-	-


**Table 4. Test Set FCI D1 Light 29 Does Not Come On (Continued)**

Procedure	No	Yes
j. Replace left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step k. ....	-	-
k. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) Left Dispenser Housing MX-7721/ALE-29A		
(2) Right throttle grip		
(3) Programmer MX-9254/ALE-39		
(4) 65P-P001B/65P-P001A		
(5) 52J-H048		
(6) 65P-L003		
(7) W3P1		
(8) Door 39L .....	-	-

**Table 5. Test Set FCI D1 Light 30 Does Not Come On**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.	
For locator, see WP008 00.	

**Table 5. Test Set FCI D1 Light 30 Does Not Come On (Continued)**

Malfunction is caused by one of the items listed below:		
Aircraft Wiring Left Dispenser Housing MX-7721/ALE-29A Left Electrical Switching Unit SA-1874/ALE-39		
Procedure	No	Yes
<div style="text-align: center;">  <p>CAUTION</p> </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
a. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Disconnect W3P1 from J3 on test set.		
(6) Open door 39L (A1-F18AC-LMM-010).		
(7) On 161353 THRU 161521, disconnect 65P-P001B from left Electrical Switching Unit SA-1874/ALE-39.		
(8) On 161522 AND UP, disconnect 65P-P001A from left Electrical Switching Unit SA-1874/ALE-39.		
(9) Does continuity exist from 65P-P001B/65P-P001A pin g to W3P1 pin g? .....	c	b
b. Replace left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step f. ....	-	-

**Table 5. Test Set FCI D1 Light 30 Does Not Come On (Continued)**

Procedure	No	Yes
c. Do the substeps below:		
(1) Disconnect W3P2 from test adapter, and remove test adapter from left Dispenser Housing MX-7721/ALE-29A.		
(2) Remove left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(3) Install test adapter in left Dispenser Housing MX-7721/ALE-29A, and connect W3P2 to test adapter.		
(4) Does continuity exist from P1 pin g to W3P1 pin g? .....	e	d
d. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) from 65J-P004 pin g to 65P-P001B/65P-P001A pin g. Do step f. ....	-	-
e. Replace left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) W3P1		
(2) 65P-P001B/65P-P001A		
(3) Left Dispenser Housing MX-7721/ALE-29A		
(4) Door 39L .....	-	-

---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TROUBLESHOOTING - FUNCTIONAL TEST PART 2 USING AN/USM-225 TEST SET**  
**COUNTERMEASURES DISPENSING SYSTEM**

---

### Reference Material

Line Maintenance Procedures . . . . . A1-F18AC-LMM-000  
Line Maintenance Access Doors . . . . . A1-F18AC-LMM-010

### Alphabetical Index

Subject	Page No.
Table 1. Test Set Pulse Light 12 Does Not Come On . . . . .	1
Table 2. Test Set Pulse Lights 13 Through 18 Do Not Come On . . . . .	5
Table 3. Pulse Light(s) Do Not Come On During Programmed Chaff Test . . . . .	7
Table 4. Test Set Pulse Light 29 Does Not Come On . . . . .	10
Table 5. Test Set Pulse Light 30 Does Not Come On . . . . .	13

### Record of Applicable Technical Directives

None

**Table 1. Test Set Pulse Light 12 Does Not Come On**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.	
For locator, see WP008 00.	

Table 1. Test Set Pulse Light 12 Does Not Come On (Continued)

Malfunction is caused by one of the items listed below:  Aircraft Wiring ECM Control Panel Assembly ECM DISP Switch Left Dispenser Housing MX-7721/ALE-29A Left Electrical Switching Unit SA-1874/ALE-39		
Procedure	No	Yes
<div>CAUTION</div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>1. Pin to pin test per procedural step.</li><li>2. Shorts to ground.</li><li>3. Shorts between surrounding pins on connectors.</li><li>4. Shorts between shield and conductors.</li><li>5. Shield continuity.</li></ol> <p>Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.</p>		
a. Do the substeps below:  (1) On Programmer MX-9254/ALE-39, pull RESET switch and set to RESET (hold for 10 seconds minimum).  (2) In cockpit above left console, press ECM DISP switch.  (3) On test set, did pulse light 11 come on? .....	g	b
b. Do the substeps below:  (1) On ECM control panel, set DISPENSER select switch to OFF.  (2) On master arm control panel assembly, set MASTER switch to SAFE.  (3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.  (4) Remove electrical power (A1-F18AC-LMM-000).  (5) Remove test set from left Dispenser Housing MX-7721/ALE-29A.		

**Table 1. Test Set Pulse Light 12 Does Not Come On (Continued)**

Procedure	No	Yes
(6) Connect W2P2 on test cable W2 to test set connector J4.		
(7) Open door 39L (A1-F18AC-LMM-010).		
(8) On 161353 THRU 161521, disconnect 65P-P001B from J1 on left Electrical Switching Unit SA-1874/ALE-39.		
On 161522 AND UP, disconnect 65P-P001A from J1 on left Electrical Switching Unit SA-1874/ALE-39.		
(9) Connect W2P1 to J1 on left Electrical Switching Unit SA-1874/ALE-39.		
(10) Apply electrical power (A1-F18AC-LMM-000).		
(11) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.		
(12) On master arm control assembly, set MASTER switch to ARM.		
(13) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.		
(14) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.		
(15) On ECM control panel assembly, set DISPENSER select switch to C.		
(16) Press DISP switch. Did pulse light 12 on test set come on and go off? . . . . .	f	c
c. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Disconnect W2P1 from J1 on left Electrical Switching Unit SA-1874/ALE-39.		
(6) Remove left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(7) Does continuity exist from:		
On 161353 THRU 161521, 65P-P001B pin M to 65J-P004 pin M? . . . . .	c	d
On 161522 AND UP, 65P-P001A pin M to 65J-P004 pin M? . . . . .	c	d
d. Replace left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step 1. . . . .	-	-
e. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step 1. . . . .	-	-

**Table 1. Test Set Pulse Light 12 Does Not Come On (Continued)**

Procedure	No	Yes
f. Replace left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step 1. ....	-	-
g. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(6) Above left console, press and hold ECM DISP switch. Does continuity exist from 52P-H087 pin 44 to 52P-H087 pin 37? .....	h	k
h. Do the substeps below:		
(1) Remove ECM DISP switch (A1-F18AC-760-300, WP008 00).		
(2) With ECM DISP switch pressed and held, does continuity exist between terminals on ECM DISP switch? .....	i	j
i. Replace ECM DISP switch (A1-F18AC-760-300, WP008 00). Do step 1. ....	-	-
j. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) from 52P-H087 to ECM DISP switch. Do step 1. ....	-	-
k. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step 1. ....	-	-
l. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-P001A		
(2) 65P-P001B		
(3) 65J-P004		
(4) Left Dispenser Housing MX-7721/ALE-29A		
(5) ECM control panel assembly		
(6) ECM DISP switch		
(7) Close door 39L .....	-	-




**Table 2. Test Set Pulse Lights 13 Through 18 Do Not Come On**

Support Equipment Required		
<b>NOTE</b>		
Alternate item type designations or part numbers are listed in parentheses.		
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>	
260-6XLP (AN/USM-311)	Multimeter	
<b>Materials Required</b>		
None		
<b>NOTE</b>		
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.		
For locator, see WP008 00.		
Malfunction is caused by one of the items listed below:		
Aircraft Wiring ECM Control Panel Assembly Programmer MX-9254/ALE-39		
Procedure	No	Yes
<div><div>CAUTION</div><p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p><p><b>NOTE</b></p><p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p><ol style="list-style-type: none"><li>1. Pin to pin test per procedural step.</li><li>2. Shorts to ground.</li><li>3. Shorts between surrounding pins on connectors.</li><li>4. Shorts between shield and conductors.</li><li>5. Shield continuity.</li></ol></div>		

**Table 2. Test Set Pulse Lights 13 Through 18 Do Not Come On (Continued)**

Procedure	No	Yes
a. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(6) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(7) Set multimeter to the RX1 scale.		
(8) On ECM control panel assembly, set DISPENSER select switch to C.		
(9) On F/A-18A, with DISP switch pressed and held, does continuity exist from 65P-L003 pin J (+) to 65P-L003 pin D (-)? .....	b	e
(10) On F/A-18B, with DISP switch pressed and held, does continuity exist from 65P-K003 pin J (+) to 65P-K003 pin D (-)? .....	b	e
b. Do the substeps below:		
(1) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(2) On F/A-18A, does continuity exist from 52P-H087 pin 21 to 65P-L003 pin J? .....	c	d
(3) On F/A-18B, does continuity exist from 52P-H087 pin 21 to 65P-K003 pin J? .....	c	d
c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step f. ....	-	-
d. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step f. ....	-	-
e. Replace Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-L003		
(2) Programmer MX-9254/ALE-39		
(3) ECM control panel assembly .....	-	-

**Table 3. Pulse Light(s) Do Not Come On During Programmed Chaff Test**

Support Equipment Required		
<b>NOTE</b>		
Alternate item type designations or part numbers are listed in parentheses.		
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>	
260-6XLP (AN/USM-311)	Multimeter	
<b>Materials Required</b>		
None		
<b>NOTE</b>		
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.		
For locator, see WP008 00.		
Malfunction is caused by one of the items listed below:		
Aircraft Wiring Left Dispenser Housing MX-7721/ALE-29A Left Electrical Switching Unit SA-1874/ALE-39		
Procedure	No	Yes
<div></div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>1. Pin to pin test per procedural step.</li><li>2. Shorts to ground.</li><li>3. Shorts between surrounding pins on connectors.</li><li>4. Shorts between shield and conductors.</li><li>5. Shield continuity.</li></ol>		
a. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		

**Table 3. Pulse Light(s) Do Not Come On During Programmed Chaff Test (Continued)**

Procedure	No	Yes
<p>(2) On master arm control panel assembly, set MASTER switch to SAFE.</p> <p>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</p> <p>(4) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(5) Remove test set from left Dispenser Housing MX-7721/ALE-29A.</p> <p>(6) Connect W2P2 on test cable W2 to J4 on test set.</p> <p>(7) Open door 39L (A1-F18AC-LMM-010).</p> <p>(8) On 161353 THRU 161521, disconnect 65P-P001B from J1 on left Electrical Switching Unit SA-1874/ALE-39.</p> <p>On 161522 AND UP, disconnect 65P-P001A from J1 on left Electrical Switching Unit SA-1874/ALE-39.</p> <p>(9) Connect W2P1 to J1 on left Electrical Switching Unit SA-1874/ALE-39.</p> <p>(10) Apply electrical power (A1-F18AC-LMM-000).</p> <p>(11) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.</p> <p>(12) On master arm control assembly, set MASTER switch to ARM.</p> <p>(13) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.</p> <p>(14) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.</p> <p>(15) On ECM control panel assembly, set DISPENSER select switch to C.</p> <p>(16) Set MODE SEL switch to SNGL.</p>		
<b>NOTE</b>		
Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.		
<p>(17) On Programmer MX-9254/ALE-39, pull RESET switch and set to RESET (hold for 10 seconds minimum).</p> <p>(18) On ECM control panel assembly, press DISP switch two times.</p> <p>(19) Set MODE SEL switch to PRGM.</p> <p>(20) Press DISP switch. Did pulse lights 3 through 18 come on and go off? .....</p>	e	b

**Table 3. Pulse Light(s) Do Not Come On During Programmed Chaff Test (Continued)**

Procedure	No	Yes
<p>b. Do the substeps below:</p> <p>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</p> <p>(2) On master arm control panel assembly, set MASTER switch to SAFE.</p> <p>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR to NORM.</p> <p>(4) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(5) Disconnect W2P1 from J1 on left Electrical Switching Unit SA-1874/ALE-39.</p> <p>(6) Remove left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).</p> <p>(7) For pulse light(s) that did not come on, does continuity exist from:</p> <p>Pulse light 3, 65P-P001A/65P-P001B pin N to 65J-P004 pin N</p> <p>Pulse light 4, 65P-P001A/65P-P001B pin P to 65J-P004 pin P</p> <p>Pulse light 5, 65P-P001A/65P-P001B pin R to 65J-P004 pin R</p> <p>Pulse light 6, 65P-P001A/65P-P001B pin S to 65J-P004 pin S</p> <p>Pulse light 7, 65P-P001A/65P-P001B pin T to 65J-P004 pin T</p> <p>Pulse light 8, 65P-P001A/65P-P001B pin U to 65J-P004 pin U</p> <p>Pulse light 9, 65P-P001A/65P-P001B pin V to 65J-P004 pin V</p> <p>Pulse light 10, 65P-P001A/65P-P001B pin W to 65J-P004 pin W</p> <p>Pulse light 11, 65P-P001A/65P-P001B pin X to 65J-P004 pin X</p> <p>Pulse light 12, 65P-P001A/65P-P001B pin Y to 65J-P004 pin Y</p> <p>Pulse light 13, 65P-P001A/65P-P001B pin Z to 65J-P004 pin Z</p> <p>Pulse light 14, 65P-P001A/65P-P001B pin a to 65J-P004 pin a</p> <p>Pulse light 15, 65P-P001A/65P-P001B pin b to 65J-P004 pin b</p> <p>Pulse light 16, 65P-P001A/65P-P001B pin c to 65J-P004 pin c</p> <p>Pulse light 17, 65P-P001A/65P-P001B pin d to 65J-P004 pin d</p> <p>Pulse light 18, 65P-P001A/65P-P001B pin e to 65J-P004 pin e? . . . . .</p>	c	d
c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step f. . . . .	-	-
d. Replace left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step f. . . . .	-	-
e. Replace left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step f. . . . .	-	-
f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-P001A/65P-P001B		
(2) Left Dispenser Housing MX-7721/ALE-29A		
(3) Door 39L . . . . .	-	-

Table 4. Test Set Pulse Light 29 Does Not Come On

Support Equipment Required					
NOTE					
Alternate item type designations or part numbers are listed in parentheses.					
Part Number or Type Designation	Nomenclature				
260-6XLP (AN/USM-311)	Multimeter				
Materials Required					
None					
NOTE					
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.					
For locator, see WP008 00.					
Malfunction is caused by one of the items listed below:					
Aircraft Wiring Right Throttle Grip Left Dispenser Housing MX-7721/ALE-29A Left Electrical Switching Unit SA-1874/ALE-39					
Procedure	No	Yes			
<div>CAUTION</div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>Pin to pin test per procedural step.</li><li>Shorts to ground.</li><li>Shorts between surrounding pins on connectors.</li><li>Shorts between shield and conductors.</li><li>Shield continuity.</li></ol> <table><tr><td>a. On ECM control panel assembly, does CHAFF counter indicate 1? .....</td><td>g</td><td>b</td></tr></table>			a. On ECM control panel assembly, does CHAFF counter indicate 1? .....	g	b
a. On ECM control panel assembly, does CHAFF counter indicate 1? .....	g	b			

**Table 4. Test Set Pulse Light 29 Does Not Come On (Continued)**

Procedure	No	Yes
<p>b. Do the substeps below:</p> <ol style="list-style-type: none"> <li>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</li> <li>(2) On master arm control panel assembly, set MASTER switch to SAFE.</li> <li>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</li> <li>(4) Remove electrical power (A1-F18AC-LMM-000).</li> <li>(5) Remove test set from left Dispenser Housing MX-7721/ALE-29A.</li> <li>(6) Open door 39L (A1-F18AC-LMM-010).</li> <li>(7) On 161353 THRU 161521, disconnect 65P-P001B from J1 on left Electrical Switching Unit SA-1874/ALE-39.  On 161522 AND UP, disconnect 65P-P001A from J1 on left Electrical Switching Unit SA-1874/ALE-39.</li> <li>(8) Connect W2P1 on test cable W2 to J1 on left Electrical Switching Unit SA-1874/ALE-39.</li> <li>(9) Connect W2P2 on test cable W2 to J4 on test set.</li> <li>(10) Apply electrical power (A1-F18AC-LMM-000).</li> <li>(11) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.</li> <li>(12) On master arm control assembly, set MASTER switch to ARM.</li> <li>(13) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.</li> <li>(14) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.</li> <li>(15) On ECM control panel assembly, set DISPENSER select switch to C.</li> </ol>		
<b>NOTE</b>		
Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.		
<ol style="list-style-type: none"> <li>(16) On Programmer MX-9254/ALE-39, pull RESET switch and set to RESET (hold for 10 seconds minimum).</li> <li>(17) On ECM control panel assembly, set MODE SEL switch to PRGM.</li> <li>(18) Press DISP switch, part of DISPENSER select switch.</li> <li>(19) At end of chaff dispensing program (pulse light 26 comes on and goes off), press DISP switch again.</li> </ol>		

**Table 4. Test Set Pulse Light 29 Does Not Come On (Continued)**

Procedure	No	Yes
(20) Did pulse light 29 come on and go off? .....	c	d
c. Replace left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step i. ....	-	-
d. Do the substeps below:		
(1) Remove left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(2) Does continuity exist from:		
On 161353 THRU 161521, 65P-P001B pin f to 65J-R005 pin f? .....	e	f
On 161522 AND UP, 65P-P001A pin f to 65J-R005 pin f? .....	e	f
e. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step i. ....	-	-
f. Replace left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step i. ....	-	-
g. Do the substeps below:		
(1) Do applicable part of right throttle grip removal for access to 52J-H048 (A1-F18AC-270-300, WP088 00).		
(2) Disconnect P1 from 52J-H048.		
(3) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(4) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(5) On F/A-18A, does continuity exist from 52J-H048 pin 22 to 65P-L003 pin U? .....	e	h
(6) On F/A-18B, does continuity exist from 52J-H048 pin 22 to 65P-K003 pin U? .....	e	h
h. Replace right throttle grip (A1-F18AC-270-300, WP088 00). Do step i. ....	-	-
i. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) Left Dispenser Housing MX-7721/ALE-29A		
(2) Right throttle grip		
(3) Programmer MX-9254/ALE-39		
(4) 65P-P001A/65P-P001B		
(5) 52J-H048		
(6) 65P-L003		
(7) Door 39L .....	-	-



**Table 5. Test Set Pulse Light 30 Does Not Come On**

Support Equipment Required		
NOTE		
Alternate item type designations or part numbers are listed in parentheses.		
Part Number or Type Designation	Nomenclature	
260-6XLP (AN/USM-311)	Multimeter	
Materials Required		
None		
NOTE		
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.		
For locator, see WP008 00.		
Malfunction is caused by one of the items listed below:		
Aircraft Wiring		
Left Dispenser Housing MX-7721/ALE-29A		
Left Electrical Switching Unit SA-1874/ALE-39		
Procedure	No	Yes
<div>CAUTION</div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p>NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>1. Pin to pin test per procedural step.</li><li>2. Shorts to ground.</li><li>3. Shorts between surrounding pins on connectors.</li><li>4. Shorts between shield and conductors.</li><li>5. Shield continuity.</li></ol> <p>a. Do the substeps below:</p> <p>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</p>		

**Table 5. Test Set Pulse Light 30 Does Not Come On (Continued)**

Procedure	No	Yes
<p>(2) On master arm control panel assembly, set MASTER switch to SAFE.</p> <p>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</p> <p>(4) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(5) Remove test set from left Dispenser Housing MX-7721/ALE-29A.</p> <p>(6) Open door 39L (A1-F18AC-LMM-010).</p> <p>(7) On 161353 THRU 161521, disconnect 65P-P001B from J1 on left Electrical Switching Unit SA-1874/ALE-39.</p> <p>On 161522 AND UP, disconnect 65P-P001A from J1 on left Electrical Switching Unit SA-1874/ALE-39.</p> <p>(8) Connect W2P1 on test cable W2 to J1 on left Electrical Switching Unit SA-1874/ALE-39.</p> <p>(9) Connect W2P2 on test cable W2 to J4 on test set.</p> <p>(10) Apply electrical power (A1-F18AC-LMM-000).</p> <p>(11) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.</p> <p>(12) On master arm control assembly, set MASTER switch to ARM.</p> <p>(13) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.</p> <p>(14) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.</p> <p>(15) On ECM control panel assembly, set DISPENSER select switch to C.</p>		
<b>NOTE</b>		
Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.		
<p>(16) On Programmer MX-9254/ALE-39, pull RESET switch and set to RESET (hold for 10 seconds minimum).</p> <p>(17) On ECM control panel assembly, set MODE SEL switch to PRGM.</p> <p>(18) Press DISP switch, part of DISPENSER select switch.</p> <p>(19) At end of chaff dispensing program (pulse light 26 comes on and goes off), press DISP switch again.</p> <p>(20) Did pulse light 30 come on and go off? .....</p>	b	c

**Table 5. Test Set Pulse Light 30 Does Not Come On (Continued)**

Procedure	No	Yes
b. Replace left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step f. ....	-	-
c. Do the substeps below:		
(1) Remove left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(2) Does continuity exist from:		
On 161353 THRU 161521, 65P-P001B pin g to 65J-P004 pin g? ....	d	e
On 161522 AND UP, 65P-P001A pin g to 65J-P004 pin g? ....	d	e
d. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) from 65J-P004 pin g to 65P-P001A pin g. Do step f. ....	-	-
e. Replace left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-P001A/65P-P001B		
(2) Left Dispenser Housing MX-7721/ALE-29A		
(3) Door 39L ....	-	-

**THIS PAGE INTENTIONALLY LEFT BLANK.**

---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TROUBLESHOOTING - FUNCTIONAL TEST PART 3 USING AN/ALM-70A TEST SET**  
**COUNTERMEASURES DISPENSING SYSTEM**

---

**Reference Material**

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Line Maintenance Access Doors .....	A1-F18AC-LMM-010

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Table 1. Test Set FCI D1 Light 1 Does Not Come On .....	1
Table 2. FLARE Counter Does Not Step to 19 .....	4
Table 3. Test Set FCI D1 Lights 2 Through 4 Do Not Come On, and Flare Counter Did Not Count Down ...	6
Table 4. One FCI D1 Light Does Not Come On and FLARE Counter Indicates 16 .....	8
Table 5. Wrong Indications in Flare/Multiple/Single Test .....	11

**Record of Applicable Technical Directives**

None

**Table 1. Test Set FCI D1 Light 1 Does Not Come On**

<b>Support Equipment Required</b>	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	

Table 1. Test Set FCI D1 Light 1 Does Not Come On (Continued)

<div>NOTE</div> <p>Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.</p> <p>For locator, see WP008 00.</p> <p>Malfunction is caused by one of the items listed below:</p> <div>Aircraft Wiring ECM Control Panel Assembly Left Dispenser Housing MX-7721/ALE-29A Left Electrical Switching Unit SA-1874/ALE-39 Programmer MX-9254/ALE-39</div>		
Procedure	No	Yes
<div>CAUTION</div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <div>NOTE</div> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <div><div><div>1. Pin to pin test per procedural step.</div><div>2. Shorts to ground.</div><div>3. Shorts between surrounding pins on connectors.</div><div>4. Shorts between shield and conductors.</div><div>5. Shield continuity.</div></div></div>		
a. Did ECM control panel assembly FLARE counter count decrease to 19? .....	b	e
b. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		

**Table 1. Test Set FCI D1 Light 1 Does Not Come On (Continued)**

Procedure	No	Yes
<p>(6) On ECM control panel assembly, with DISPENSER switch set to F/S, MODE SEL switch to SNGL, DISP switch pressed and held, and multimeter set to the RX1 scale, does continuity exist from:</p> <p>52J-H087 pin 44 (-) to 52J-H087 pin 21 (+)</p> <p>52J-H087 pin 44 (-) to 52J-H087 pin 14 (+)</p> <p>52J-H087 pin 29 to 52J-H087 pin 23</p> <p>52J-H087 pin 30 to 52J-H087 pin 13? .....</p>	c	d
c. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step 1. ....	-	-
d. Replace Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step 1. ....	-	-
e. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR, and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(6) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(7) Open door 39L (A1-F18AC-LMM-010).		
(8) On 161353 THRU 161521, disconnect 65P-P001A from J2 on left Electrical Switching Unit SA-1874/ALE-39.		
(9) On 161522 AND UP, disconnect 65P-P001B from J2 on left Electrical Switching Unit SA-1874/ALE-39.		
(10) On F/A-18A, does continuity exist from 65P-L003 pin F to 65P-P001A/65P-P001B pin A? .....	f	g
(11) On F/A-18B, does continuity exist from 65P-K003 pin F to 65P-P001A/65P-P001B pin A? .....	f	g
f. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step 1. ....	-	-
g. Do the substeps below:		
(1) Disconnect 65P-P001B/65P-P001A from J1 on left Electrical Switching Unit SA-1874/ALE-39.		
(2) Disconnect W3P1 from J3 on test set.		
(3) Does continuity exist from 65P-P001B/65P-P001A pin A to W3P1 pin A? .....	h	k

**Table 1. Test Set FCI D1 Light 1 Does Not Come On (Continued)**

Procedure	No	Yes
h. Do the substeps below:		
(1) Disconnect W3P2 from test adapter, and remove test adapter from left Dispenser Housing MX-7721/ALE-29A.		
(2) Remove left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(3) Install test adapter in left Dispenser Housing MX-7721/ALE-29A, and connect W3P2 to test adapter.		
(4) Does continuity exist from P1 pin A to W3P1 pin A? .....	i	j
i. Replace left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step l. ....	-	-
j. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) from 65P-P001B/65P-P001A pin A to 64J-P004 pin A. Do step l. ....	-	-
k. Replace left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step l. ....	-	-
l. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-P001B/65P-P001A		
(2) 65P-L003		
(3) P1		
(4) W3P1		
(5) Programmer MX-9254/ALE-39		
(6) ECM Control Panel Assembly		
(7) Left Dispenser Housing MX-7721/ALE-29A		
(8) Door 39L .....	-	-

**Table 2. FLARE Counter Does Not Step to 19**

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
Materials Required	
None	



**Table 2. FLARE Counter Does Not Step to 19 (Continued)**

NOTE		
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.		
For locator, see WP008 00.		
Malfunction is caused by one of the items listed below:		
Aircraft Wiring ECM Control Panel Assembly Programmer MX-9254/ALE-39		
Procedure	No	Yes
<div style="text-align: center;"><b>CAUTION</b></div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
a. Do the substeps below:		
<p style="text-align: center;"><b>NOTE</b></p> <p>Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.</p>		
(1) On programmer, set LOAD L20 to F, pull RESET switch, and set to RESET (hold for 10 seconds minimum).		
(2) On ECM control panel assembly, press DISP switch. Does FLARE counter indicate 19? .....	b	e
b. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR to NORM.		


**Table 2. FLARE Counter Does Not Step to 19 (Continued)**

Procedure	No	Yes
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(6) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(7) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(8) On F/A-18A, does continuity exist between 52P-H087 pin 22 and 65P-L003 pin T? .....	c	d
(9) On F/A-18B, does continuity exist between 52P-H087 pin 22 and 65P-K003 pin T? .....	c	d
c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step f. ....	-	-
d. Malfunction has been isolated to ECM control panel assembly (A1-F18AC-760-300, WP007 00) or Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step f. ....	-	-
e. Replace Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure the items listed are connected, installed, or closed:		
(1) 65P-L003		
(2) Programmer MX-9254/ALE-39		
(3) ECM Control Panel Assembly .....	-	-

**Table 3. Test Set FCI D1 Lights 2 Through 4 Do Not Come On, and FLARE Counter Did Not Count Down**

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
Materials Required	
None	

**Table 3. Test Set FCI D1 Lights 2 Through 4 Do Not Come On, and FLARE Counter Did Not Count Down (Continued)**

NOTE		
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.		
For locator, see WP008 00.		
Malfunction is caused by one of the items listed below:		
Aircraft Wiring ECM Control Panel Assembly Programmer MX-9254/ALE-39		
Procedure	No	Yes
<div style="text-align: center;">  </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <div style="text-align: center;">NOTE</div> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
a. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to SAFE.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(6) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(7) On ECM control panel assembly, set DISPENSER selector switch to F/S.		


**Table 3. Test Set FCI D1 Lights 2 Through 4 Do Not Come On, and FLARE Counter Did Not Count Down (Continued)**

Procedure	No	Yes
(8) With multimeter set to the RX1 scale and on the ECM control panel assembly the DISP select switch pressed and held, does continuity exist from:		
On F/A-18A, 65P-L003 pin D (-) to 65P-L003 pin M (+)? .....	b	d
On F/A-18B, 65P-K003 pin D (-) to 65P-K003 pin M (+)? .....	b	d
b. Do the substeps below:		
(1) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(2) Does continuity exist from:		
On F/A-18A, 65P-L003 pin M to 52P-H087 pin 12? .....	c	e
On F/A-18B, 65P-K003 pin M to 52P-H087 pin 12? .....	c	e
c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step f. ....	-	-
d. Replace Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step f. ....	-	-
e. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) ECM control panel assembly		
(2) 65P-L003 (F/A-18A)		
(3) 65P-K003 (F/A-18B)		
(4) Programmer MX-9254/ALE-39 .....	-	-

**Table 4. One FCI D1 Light Does Not Come On and FLARE Counter Indicates 16**

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter


**Table 4. One FCI D1 Light Does Not Come On and FLARE Counter Indicates 16 (Continued)**

<p align="center"><b>Materials Required</b></p> <p align="center">None</p> <p align="center"><b>NOTE</b></p> <p align="center">Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.</p> <p align="center">For locator, see WP008 00.</p> <p>Malfunction is caused by one of the items listed below:</p> <p>Aircraft Wiring Left Dispenser Housing MX-7721/ALE-29A Left Electrical Switching Unit SA-1874/ALE-39</p>		
Procedure	No	Yes
<p align="center"></p> <p align="center">To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p align="center"><b>NOTE</b></p> <p align="center">The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol> <p>a. Do the substeps below:</p> <ol style="list-style-type: none"> <li>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</li> <li>(2) On master arm control panel assembly, set MASTER switch to SAFE.</li> <li>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</li> <li>(4) Remove electrical power (A1-F18AC-LMM-000).</li> <li>(5) Open door 39L (A1-F18AC-LMM-010).</li> <li>(6) On 161353 THRU 161521, disconnect 65P-P001B from left Electrical Switching Unit SA-1874/ALE-39.</li> </ol>		

**Table 4. One FCI D1 Light Does Not Come On and FLARE Counter Indicates 16 (Continued)**

Procedure	No	Yes
<p>(7) On 161522 AND UP, disconnect 65P-P001A from left Electrical Switching Unit SA-1874/ALE-39.</p> <p>(8) Disconnect W3P1 from J3 on test set.</p> <p>(9) Does continuity exist from:</p> <p style="padding-left: 40px;">For FCI D1 2, 65P-P001B/65P-P001A pin B to W3P1 pin B</p> <p style="padding-left: 40px;">For FCI D1 3, 65P-P001B/65P-P001A pin C to W3P1 pin C</p> <p style="padding-left: 40px;">For FCI D1 4, 65P-P001B/65P-P001A pin D to W3P1 pin D? .....</p>	b	d
<p>b. Do the substeps below:</p> <p>(1) Disconnect W3P2 from test adapter, and remove test adapter from left Dispenser Housing MX-7721/ALE-29A.</p> <p>(2) Remove left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).</p> <p>(3) Install test adapter in left Dispenser Housing MX-7721/ALE-29A, and connect W3P2 to test adapter.</p> <p>(4) Does continuity exist from:</p> <p style="padding-left: 40px;">For FCI D1 2, P1 pin B to W3P1 pin B</p> <p style="padding-left: 40px;">For FCI D1 3, P1 pin C to W3P1 pin C</p> <p style="padding-left: 40px;">For FCI D1 4, P1 pin D to W3P1 pin D? .....</p>	e	c
<p>c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) from:</p> <p style="padding-left: 40px;">65P-P001B/65P-P001A pin B to 65J-P004 pin B</p> <p style="padding-left: 40px;">65P-P001B/65P-P001A pin C to 65J-P004 pin C</p> <p style="padding-left: 40px;">65P-P001B/65P-P001A pin D to 65J-P004 pin D. Do step f. ....</p>	-	-
<p>d. Replace left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step f. ....</p>	-	-
<p>e. Replace left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step f. ....</p>	-	-
<p>f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:</p> <p>(1) 65P-P001B/65P-P001A</p> <p>(2) 65J-P004</p> <p>(3) Left Dispenser Housing MX-7721/ALE-29A</p> <p>(4) Door 39L</p> <p>(5) W3P1 .....</p>	-	-

**Table 5. Wrong Indications in Flare/Multiple/Single Test**

<b>Support Equipment Required</b>					
<p><b>NOTE</b></p> <p>Alternate item type designations or part numbers are listed in parentheses.</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top; padding-bottom: 10px;"> <p><b>Part Number or Type Designation</b></p> <p>260-6XLP (AN/USM-311)</p> </td> <td style="width: 50%; vertical-align: top; padding-bottom: 10px;"> <p><b>Nomenclature</b></p> <p>Multimeter</p> </td> </tr> </table> <p style="text-align: center;"><b>Materials Required</b></p> <p style="text-align: center;">None</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.</p> <p>For locator, see WP008 00.</p> <p>Malfunction is caused by one of the items listed below:</p> <ul style="list-style-type: none"> <li>Aircraft Wiring</li> <li>ECM Control Panel Assembly</li> <li>Left Dispenser Housing MX-7721/ALE-29A</li> <li>Left Electrical Switching Unit SA-1874/ALE-39</li> <li>Programmer MX-9254/ALE-39</li> <li>Right Dispenser Housing MX-7721/ALE-29A</li> <li>Right Electrical Switching Unit SA-1874/ALE-39</li> </ul>			<p><b>Part Number or Type Designation</b></p> <p>260-6XLP (AN/USM-311)</p>	<p><b>Nomenclature</b></p> <p>Multimeter</p>	
<p><b>Part Number or Type Designation</b></p> <p>260-6XLP (AN/USM-311)</p>	<p><b>Nomenclature</b></p> <p>Multimeter</p>				
<b>Procedure</b>	<b>No</b>	<b>Yes</b>			
<div style="text-align: center; margin-bottom: 20px;">  </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol> <table style="width: 100%; border: none; margin-top: 20px;"> <tr> <td style="width: 70%; border-right: 1px solid black; padding-right: 10px;"> a. Did both the 5th FCI D1 and 1st FCI D2 lights fail to come on? ..... </td> <td style="width: 10%; border-right: 1px solid black; text-align: center; padding: 0 10px;">b</td> <td style="width: 20%; text-align: center; padding: 0 10px;">u</td> </tr> </table>			a. Did both the 5th FCI D1 and 1st FCI D2 lights fail to come on? .....	b	u
a. Did both the 5th FCI D1 and 1st FCI D2 lights fail to come on? .....	b	u			

**Table 5. Wrong Indications in Flare/Multiple/Single Test (Continued)**

Procedure	No	Yes
b. Did the 5th FCI D1 light come on? .....	c	h
c. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Open door 39L (A1-F18AC-LMM-010).		
(6) On 161353 THRU 161521, disconnect 65P-P001B from left Electrical Switching Unit SA-1874/ALE-39.		
(7) On 161522 AND UP, disconnect 65P-P001A from left Electrical Switching Unit SA-1874/ALE-39.		
(8) Disconnect W3P1 from J3 on test set.		
(9) Does continuity exist from 65P-P001B/65P-P001A pin E to W3P1 pin E? .....	d	g
d. Do the substeps below:		
(1) Disconnect W3P2 from test adapter, and remove test adapter from left Dispenser Housing MX-7721/ALE-29A.		
(2) Remove left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(3) Install test adapter in left Dispenser Housing MX-7721/ALE-29A, and connect W3P2 to test adapter.		
(4) Does continuity exist from P1 pin E to W3P1 pin E? .....	e	f
e. Replace left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step w. ....	-	-
f. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) between 65J-P004 pin E to 65P-P001B/65P-P001A pin E. Do step w. ....	-	-
g. Replace left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step w. ....	-	-
h. Do the substeps below:		
(1) On ECM control panel, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		



**Table 5. Wrong Indications in Flare/Multiple/Single Test (Continued)**

Procedure	No	Yes
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Open door 39R (A1-F18AC-LMM-010).		
(6) On 161353 THRU 161521, disconnect 65P-R002A from right Electrical Switching Unit SA-1874/ALE-39.		
(7) On 161522 AND UP, disconnect 65P-R002B from right Electrical Switching Unit SA-1874/ALE-39.		
(8) Apply electrical power (A1-F18AC-LMM-000).		
(9) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.		
(10) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.		
(11) On master arm control panel assembly, set MASTER switch to ARM.		
(12) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.		
(13) On ECM control panel assembly, set DISPENSER select switch to F/M.		
(14) On programmer, pull RESET switch, set to RESET and hold. Does 28vdc exist from 65P-R002A/65P-R002B pin D to 65P-R002A/65P-R002B pin F (ground)? ....	i	l
i. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Does continuity exist from 65P-R002A/65P-R002B pin F to aircraft ground? .....	j	k
j. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step w. ....	-	-
k. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) between:		
On F/A-18A, 65P-L003 pin A and 65P-R002A/65P-R002B pin D		
On F/A-18B, 65P-K003 pin A and 65P-R002A/65P-R002B pin D. Do step w. ....	-	-
l. Does 28vdc exist from 65P-R002A/65P-R002B pin B to 65P-R002A/65P-R002B pin F? ...	m	n
m. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) between 65P-R002A/65P-R002B pin B and 52P-F058D pin d. Do step w. ....	-	-

**Table 5. Wrong Indications in Flare/Multiple/Single Test (Continued)**

Procedure	No	Yes
<p>n. Do the substeps below:</p> <p>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</p> <p>(2) On master arm control panel assembly, set MASTER switch to SAFE.</p> <p>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</p> <p>(4) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(5) On 161353 THRU 161521, disconnect 65P-R002B from right Electrical Switching Unit SA-1874/ALE-39.</p> <p>(6) On 161522 AND UP, disconnect 65P-R002A from right Electrical Switching Unit SA-1874/ALE-39.</p> <p>(7) Disconnect W4P1 from J4 on test set.</p> <p>(8) Does continuity exist from:</p> <p>65P-R002B/65P-R002A pin A to W4P1 pin A</p> <p>65P-R002B/65P-R002A pin h to W4P1 pin h</p> <p>65P-R002B/65P-R002A pin j to W4P1 pin j? .....</p>	o	r
<p>o. Do the substeps below:</p> <p>(1) Disconnect W4P2 from test adapter, and remove test adapter from right Dispenser Housing MX-7721/ALE-29A.</p> <p>(2) Remove right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).</p> <p>(3) Install test adapter in right Dispenser Housing MX-7721/ALE-29A, and connect W4P2 to test adapter.</p> <p>(4) Does continuity exist from:</p> <p>P1 pin A to W4P1 pin A</p> <p>P1 pin h to W4P1 pin h</p> <p>P1 pin j to W4P1 pin j? .....</p>	p	q
<p>p. Replace right Dispenser Housing Unit MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step w. ....</p>	-	-
<p>q. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) between:</p> <p>65P-R002B/65P-R002A pin A to 65J-R005 pin A</p> <p>65P-R002B/65P-R002A pin h to 65J-R005 pin h</p> <p>65P-R002B/65P-R002A pin j to 65J-R005 pin j. Do step w. ....</p>	-	-

**Table 5. Wrong Indications in Flare/Multiple/Single Test (Continued)**

Procedure	No	Yes
<p>r. Do the substeps below:</p> <p>(1) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.</p> <p>(2) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).</p> <p>(3) Does continuity exist from:</p> <p>On F/A-18A, 65P-L003 pin P to 65P-R002A/65P-R002B pin A? ..... j s</p> <p>On F/A-18B, 65P-K003 pin P to 65P-R002A/65P-R002B pin A? ..... j s</p>		
<p>s. Do the substeps below:</p> <p>(1) On ECM control panel assembly, set DISPENSER select switch to F/M.</p> <p>(2) Does continuity exist from:</p> <p>On F/A-18A, 65P-L003 pin H to 65P-L003 pin D? ..... t v</p> <p>On F/A-18B, 65P-K003 pin H to 65P-K003 pin D? ..... t v</p>		
<p>t. Do the substeps below:</p> <p>(1) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).</p> <p>(2) Does continuity exist between:</p> <p>On F/A-18A, 65P-L003 pin H to 52P-H087 pin 20? ..... j u</p> <p>On F/A-18B, 65P-K003 pin H to 52P-H087 pin 20? ..... j u</p>		
<p>u. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step w. ....</p>	-	-
<p>v. Malfunction has been isolated to Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00) or right Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step w. ....</p>	-	-
<p>w. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:</p> <p>(1) 65P-L003</p> <p>(2) 65P-P001A</p> <p>(3) 65P-P001B</p> <p>(4) 65P-R002A</p> <p>(5) 65P-R002B</p> <p>(6) 65J-P004</p>		

Table 5. Wrong Indications in Flare/Multiple/Single Test (Continued)

Procedure	No	Yes
(7) 65J-R005		
(8) Programmer MX-9254/ALE-39		
(9) Left Dispenser Housing MX-7721/ALE-29A		
(10) Right Dispenser Housing MX-7721/ALE-29A		
(11) ECM control panel assembly		
(12) W3P1		
(13) W4P1		
(14) Door 39L		
(15) Door 39R .....	-	-

---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TROUBLESHOOTING - FUNCTIONAL TEST PART 3 USING AN/USM-225 TEST SET**  
**COUNTERMEASURES DISPENSING SYSTEM**

---

### Reference Material

Line Maintenance Procedures . . . . . A1-F18AC-LMM-000  
Line Maintenance Access Doors . . . . . A1-F18AC-LMM-010

### Alphabetical Index

Subject	Page No.
Table 1. Test Set Pulse Light 1 Does Not Come On . . . . .	1
Table 2. FLARE Counter Does Not Step to 19 . . . . .	6
Table 3. Test Set Pulse Lights 2 Through 4 Do Not Come On, and FLARE Counter Did Not Count Down . .	8
Table 4. One FCI D1 Light Does Not Come On and FLARE Counter Indicates 16 . . . . .	10
Table 5. Wrong Indications in Flare/Multiple/Single Test . . . . .	12

### Record of Applicable Technical Directives

None

**Table 1. Test Set Pulse Light 1 Does Not Come On**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
Materials Required	
None	
<b>NOTE</b>	
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.	
For locator, see WP008 00.	

Table 1. Test Set Pulse Light 1 Does Not Come On (Continued)

Malfunction is caused by one of the items below:  Aircraft Wiring ECM Control Panel Assembly Left Dispenser Housing MX-7721/ALE-29A Left Electrical Switching Unit SA-1874/ALE-39 Programmer MX-9254/ALE-39		
Procedure	No	Yes
<div>CAUTION</div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p>NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>Pin to pin test per procedural step.</li><li>Shorts to ground.</li><li>Shorts between surrounding pins on connectors.</li><li>Shorts between shield and conductors.</li><li>Shield continuity.</li></ol>		
a. Did ECM control panel assembly FLARE counter count decrease to 19? .....	b	e
b. Do the substeps below:  (1) On ECM control panel assembly, set DISPENSER select switch to OFF.  (2) On master arm control panel assembly, set MASTER switch to SAFE.  (3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.  (4) Remove electrical power (A1-F18AC-LMM-000).  (5) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).  (6) Set multimeter to the RX1 scale.  (7) On ECM control panel assembly, with DISPENSER switch set to F/S, MODE SEL switch to SNGL and DISP switch pressed and held, does continuity exist from:  52J-H087 pin 44 (-) to 52J-H087 pin 21 (+) 52J-H087 pin 44 (-) to 52J-H087 pin 14 (+) 52J-H087 pin 29 to 52J-H087 pin 23 52J-H087 pin 30 to 52J-H087 pin 13? .....		
c. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step 1. ....	-	-

**Table 1. Test Set Pulse Light 1 Does Not Come On (Continued)**

Procedure	No	Yes
d. Replace Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step 1. . . . .	-	-
e. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR, and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Open door 39L (A1-F18AC-LMM-010).		
(6) On 161363 THRU 161521, disconnect 65P-P001B from J1 on left Electrical Switching Unit SA-1874/ALE-39.		
On 161522 AND UP, Disconnect 65P-P001A from J1 on left Electrical Switching Unit SA-1874/ALE-39.		
(7) Connect W2P1 on test cable W2 to J1 on left Electrical Switching Unit SA-1874/ALE-39.		
(8) Connect W2P2 on test cable W2 to J4 on test set.		
(9) Apply electrical power (A1-F18AC-LMM-000).		
(10) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.		
(11) On master arm control assembly, set MASTER switch to ARM.		
(12) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.		
(13) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.		
(14) On ECM control panel assembly, set DISPENSER select switch to F/S.		
<b>NOTE</b>		
Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.		
(15) On Programmer MX-9254/ALE-39 pull RESET switch and set to RESET (hold for 10 seconds minimum).		
(16) On ECM control panel assembly, press DISP switch, part of DISPENSER select switch.		
(17) On test set, does pulse light 1 come on and go off? . . . . .	f	j

Table 1. Test Set Pulse Light 1 Does Not Come On (Continued)

Procedure	No	Yes
<p>f. Do substeps below:</p> <p>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</p> <p>(2) On master arm control panel assembly, set MASTER switch to SAFE.</p> <p>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</p> <p>(4) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(5) Disconnect W2P2 from J4 on test set.</p> <p>(6) Disconnect W2P1 from left Electrical Switching Unit SA-1874/ALE-39.</p> <p>(7) On 161353 THRU 161521, disconnect 65P-P001A from J2 on left Electrical Switching Unit SA-1874/ALE-39.</p> <p>On 161522 AND UP, disconnect 65P-P001B from J2 on left Electrical Switching Unit SA-1874/ALE-39.</p> <p>(8) Connect W1P1 on test cable W1 to J1 on test set.</p> <p>(9) Connect W1P3 on test cable W1 to 65P-P001B.</p> <p>(10) Apply electrical power (A1-F18AC-LMM-000).</p> <p>(11) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.</p> <p>(12) On master arm control assembly, set MASTER switch to ARM.</p> <p>(13) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.</p> <p>(14) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.</p> <p>(15) On ECM control panel assembly, set DISPENSER select switch to F/S.</p> <p>(16) Press DISP switch, part of DISPENSER select switch.</p> <p>(17) On test set, does light B come on and go off? .....</p>	<p>g</p>	<p>i</p>
<p>g. Do the substeps below:</p> <p>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</p> <p>(2) On master arm control panel assembly, set MASTER switch to SAFE.</p> <p>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</p> <p>(4) Remove electrical power (A1-F18AC-LMM-000).</p>		



**Table 1. Test Set Pulse Light 1 Does Not Come On (Continued)**

Procedure	No	Yes
(5) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(6) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(7) Disconnect W1P3 from 65P-P001A/65P-P001B.		
(8) Does continuity exist from:		
On F/A-18A, 65P-L003 pin F to 65P-P001B pin A? .....	h	d
On F/A-18B, 65P-K003 pin F to 65P-P001B pin A? .....	h	d
h. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step j. ....	-	-
i. Replace left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step l. ....	-	-
j. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(6) Does continuity exist from:		
On 161353 THRU 161521, 65P-P001B pin A to 65J-P004 pin A? .....	h	k
On 161522 AND UP, 65P-P001A pin A to 65J-P004 pin A? .....	h	k
k. Replace left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step l. ....	-	-
l. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-P001B/65P-P001A		
(2) 65P-L003		
(3) P1		
(4) Programmer MX-9254/ALE-39		
(5) ECM Control Panel Assembly		
(6) Left Dispenser Housing MX-7721/ALE-29A		
(7) Door 39L .....	-	-

**Table 2. FLARE Counter Does Not Step to 19**

Support Equipment Required		
NOTE		
Alternate item type designations or part numbers are listed in parentheses.		
Part Number or Type Designation	Nomenclature	
260-6XLP (AN/USM-311)	Multimeter	
Materials Required		
None		
NOTE		
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.		
For locator, see WP008 00.		
Malfunction is caused by one of the items below:		
Aircraft Wiring ECM Control Panel Assembly Programmer MX-9254/ALE-39		
Procedure	No	Yes
<div>CAUTION</div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p>NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>Pin to pin test per procedural step.</li><li>Shorts to ground.</li><li>Shorts between surrounding pins on connectors.</li><li>Shorts between shield and conductors.</li><li>Shield continuity.</li></ol> <p>Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.</p>		

Table 2. FLARE Counter Does Not Step to 19 (Continued)

Procedure	No	Yes
a. Do the substeps below:		
(1) On programmer, set LOAD L20 to F, pull RESET switch, and set to RESET (hold for 10 seconds minimum).		
(2) On ECM control panel assembly, press DISP switch. Does FLARE counter indicate 19? .....	b	e
b. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(6) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(7) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(8) On F/A-18A, does continuity exist between 52P-H087 pin 22 and 65P-L003 pin T? .....	c	d
(9) On F/A-18B, does continuity exist between 52P-H087 pin 22 and 65P-K003 pin T? .....	c	d
c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step f. ....	-	-
d. Malfunction has been isolated to ECM control panel assembly (A1-F18AC-760-300, WP007 00) or Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step f. ....	-	-
e. Replace Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure the items listed are connected, installed, or closed:		
(1) 65P-L003		
(2) Programmer MX-9254/ALE-39		
(3) ECM Control Panel Assembly .....	-	-


Table 3. Test Set Pulse Lights 2 Through 4 Do Not Come On, and FLARE Counter Did Not Count Down

Support Equipment Required		
NOTE		
Alternate item type designations or part numbers are listed in parentheses.		
Part Number or Type Designation	Nomenclature	
260-6XLP (AN/USM-311)	Multimeter	
Materials Required		
None		
NOTE		
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.		
For locator, see WP008 00.		
Malfunction is caused by one of the items below:		
Aircraft Wiring ECM Control Panel Assembly Programmer MX-9254/ALE-39		
Procedure	No	Yes
<div>CAUTION</div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>Pin to pin test per procedural step.</li><li>Shorts to ground.</li><li>Shorts between surrounding pins on connectors.</li><li>Shorts between shield and conductors.</li><li>Shield continuity.</li></ol> <p>a. Do the substeps below:</p> <p>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</p>		

**Table 3. Test Set Pulse Lights 2 Through 4 Do Not Come On, and FLARE Counter Did Not Count Down (Continued)**

Procedure	No	Yes
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(6) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(7) Set multimeter to the RX1.		
(8) On ECM control panel assembly, with DISPENSER selector switch set to F/S, and DISP select switch pressed, does continuity exist from:		
On F/A-18A, 65P-L003 pin D (-) to 65P-L003 pin M (+)? .....	b	d
On F/A-18B, 65P-K003 pin D (-) to 65P-K003 pin M (-)? .....	b	d
b. Do the substeps below:		
(1) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(2) Does continuity exist from:		
On F/A-18A, 65P-L003 pin M to 52P-H087 pin 12? .....	c	e
On F/A-18B, 65P-K003 pin M to 52P-H087 pin 12? .....	c	e
c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step f. ....	-	-
d. Replace Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step f. ....	-	-
e. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) ECM control panel assembly		
(2) 65P-L003		
(3) Programmer MX-9254/ALE-39 .....	-	-

**Table 4. One FCI D1 Light Does Not Come On and FLARE Counter Indicates 16**

<b>Support Equipment Required</b>		
<b>NOTE</b>		
Alternate item type designations or part numbers are listed in parentheses.		
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>	
260-6XLP (AN/USM-311)	Multimeter	
<b>Materials Required</b>		
None		
<b>NOTE</b>		
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.		
For locator, see WP008 00.		
Malfunction is caused by one of the items below:		
Aircraft Wiring Left Dispenser Housing MX-7721/ALE-29A Left Electrical Switching Unit SA-1874/ALE-39		
<b>Procedure</b>	<b>No</b>	<b>Yes</b>
<div></div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>1. Pin to pin test per procedural step.</li><li>2. Shorts to ground.</li><li>3. Shorts between surrounding pins on connectors.</li><li>4. Shorts between shield and conductors.</li><li>5. Shield continuity.</li></ol>		

**Table 4. One FCI D1 Light Does Not Come On and FLARE Counter Indicates 16  
(Continued)**

Procedure	No	Yes
<p>a. Do the substeps below:</p> <ol style="list-style-type: none"> <li>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</li> <li>(2) On master arm control panel assembly, set MASTER switch to SAFE.</li> <li>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</li> <li>(4) Remove electrical power (A1-F18AC-LMM-000).</li> <li>(5) Open door 39L (A1-F18AC-LMM-010).</li> <li>(6) On 161353 THRU 161521, disconnect 65P-P001B from J1 on left Electrical Switching Unit SA-1874/ALE-39.  On 161522 AND UP, disconnect 65P-P001A from J1 on left Electrical Switching Unit SA-1874/ALE-39.</li> <li>(7) Connect W2P1 on test cable W2 to J1 on left Electrical Switching Unit SA-1874/ALE-39.</li> <li>(8) Connect W2P2 on test cable W2 to J4 on test set.</li> <li>(9) Apply electrical power (A1-F18AC-LMM-000).</li> <li>(10) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.</li> <li>(11) On master arm control assembly, set MASTER switch to ARM.</li> <li>(12) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.</li> <li>(13) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.</li> <li>(14) On ECM control panel assembly, set DISPENSER select switch to F/S.</li> <li>(15) Set MODE SEL switch to SNGL.</li> <li>(16) Press DISP switch part of DISPENSER select switch.</li> <li>(17) Set MODE SEL switch to PRGM.</li> <li>(18) Press DISP switch part of DISPENSER select switch.</li> <li>(19) On test set, did pulse lights 2 through 4 come on and go off? .....</li> </ol>	d	b
<p>b. Do the substeps below:</p> <ol style="list-style-type: none"> <li>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</li> <li>(2) On master arm control panel assembly, set MASTER switch to SAFE.</li> </ol>		

**Table 4. One FCI D1 Light Does Not Come On and FLARE Counter Indicates 16  
(Continued)**

Procedure	No	Yes
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(6) For pulse light that did not come on, does continuity exist from:		
For pulse light 2, 65P-P001A/65P-P001B pin B to 65J-P004 pin B		
For pulse light 3, 65P-P001A/65P-P001B pin C to 65J-P004 pin C		
For pulse light 4, 65P-P001A/65P-P001B pin D to 65J-P004 pin D? .....	c	e
c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step f. ....	-	-
d. Replace left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step f. ....	-	-
e. Replace left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-P001A/65P-P001B		
(2) Left Dispenser Housing MX-7721/ALE-29A		
(3) Door 39L .....	-	-

**Table 5. Wrong Indications in Flare/Multiple/Single Test**

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
Materials Required	
None	



**Table 5. Wrong Indications in Flare/Multiple/Single Test (Continued)**

NOTE		
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.		
For locator, see WP008 00.		
Malfunction is caused by one of the items below:		
Aircraft Wiring ECM Control Panel Assembly Left Dispenser Housing MX-7721/ALE-29A Left Electrical Switching Unit SA-1874/ALE-39 Programmer MX-9254/ALE-39		
Procedure	No	Yes
<div style="text-align: center;"><b>CAUTION</b></div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
a. On ECM control panel assembly, did FLARE counter decrease to 14? .....	b	h
b. Does FLARE counter indicate 15? .....	c	d
c. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step 1. ....	-	-
d. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(6) On ECM control panel assembly, set DISPENSER select switch to F/M.		

**Table 5. Wrong Indications in Flare/Multiple/Single Test (Continued)**

Procedure	No	Yes
(7) Does continuity exist from 52J-H087 pin 20 to pin 13? .....	c	e
e. Do the substeps below:		
(1) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(2) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(3) Does continuity exist between:		
On F/A-18A, 65P-L003 pin H to 52P-H087 pin 20? .....	f	g
On F/A-18B, 65P-K003 pin H to 52P-H087 pin 20? .....	f	g
f. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step 1. ....	-	-
g. Replace Programmer MX-9254/ALE-39 (A1-F18AC-760-200, WP006 00). Do step 1. ....	-	-
h. Do the substeps below:		
(1) On ECM control panel, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Open door 39L (A1-F18AC-LMM-010).		
(6) On 161353 THRU 161521, disconnect 65P-P001B from J1 on left Electrical Switching Unit SA-1874/ALE-39.		
On 161522 AND UP, disconnect 65P-P001A from J1 on left Electrical Switching Unit SA-1874/ALE-39.		
(7) Remove test set from left Dispenser Housing MX-7721/ALE-29A.		
(8) Connect W2P1 on test cable W2 to J1 on left Electrical Switching Unit SA-1874/ALE-39.		
(9) Connect W2P2 on test cable W2 to J4 on test set.		
(10) Apply electrical power (A1-F18AC-LMM-000).		
(11) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.		
(12) On master arm control assembly, set MASTER switch to ARM.		
(13) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.		

**Table 5. Wrong Indications in Flare/Multiple/Single Test (Continued)**

Procedure	No	Yes
(14) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.		
(15) On ECM control panel assembly, set DISPENSER select switch to F/S.		
<b>NOTE</b>		
Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.		
(16) On Programmer MX-9254/ALE-39, pull RESET switch and set to RESET (hold for 10 seconds minimum).		
(17) On ECM control panel assembly, set DISPENSER select switch to S/F PULL.		
(18) During the flare salvo sequence, did pulse light 5 come on and go off? . . . . .	k	i
i. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(6) Does continuity exist from 65P-P001A/65P-P001B pin E to 65J-P004 pin E? . . . . .	f	j
j. Replace left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step l. . . . .	-	-
k. Replace left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step l. . . . .	-	-
l. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-L003		
(2) 65P-P001A/65P-P001B		
(3) 65J-P004		
(4) Programmer MX-9254/ALE-39		
(5) Left Dispenser Housing MX-7721/ALE-29A		
(6) ECM control panel assembly		
(7) Door 39L . . . . .	-	-

**THIS PAGE INTENTIONALLY LEFT BLANK.**

---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TROUBLESHOOTING - FUNCTIONAL TEST PART 4 USING AN/ALM-70A TEST SET**  
**COUNTERMEASURES DISPENSING SYSTEM**

---

### Reference Material

Line Maintenance Procedures . . . . . A1-F18AC-LMM-000  
Line Maintenance Access Doors . . . . . A1-F18AC-LMM-010

### Alphabetical Index

Subject	Page No.
Table 1. Wrong Indication in Flare/Multiple Programmed Test . . . . .	1
Table 2. Wrong Indications While Using Right Throttle Grip Chaff/Flare Dispenser Switch . . . . .	5
Table 3. Test Set FCI D2 Light 11 Does Not Come On and Jammer Counter Indicates 19 . . . . .	9
Table 4. Jammer Counter Does Not Indicate 19 . . . . .	12


### Record of Applicable Technical Directives

None

**Table 1. Wrong Indication In Flare/Multiple Programmed Test**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
Materials Required	
None	
<b>NOTE</b>	
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.	
For locator, see WP008 00.	

**Table 1. Wrong Indication In Flare/Multiple Programmed Test (Continued)**

Malfunction is caused by one of the items below:		
Aircraft Wiring ECM Control Panel Assembly Left Dispenser Housing MX-7721/ALE-29A Left Electrical Switching Unit SA-1874/ALE-39 Programmer MX-9254/ALE-39 Right Dispenser Housing MX-7721/ALE-29A Right Electrical Switching Unit SA-1874/ALE-39		
Procedure	No	Yes
<div style="text-align: center;">  <p>CAUTION</p> </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
a. Did any of the FCI D1 and FCI D2 lights come on? .....	m	b
b. Did all FCI D1 lights come on? .....	h	c
c. For any FCI D2 lights failing to come on, do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Open door 39R (A1-F18AC-LMM-010).		
(6) On 161353 THRU 161521, disconnect 65P-R002B from right Electrical Switching Unit SA-1874/ALE-39.		
(7) On 161521 AND UP, disconnect 65P-R002A from right Electrical Switching Unit SA-1874/ALE-39.		

**Table 1. Wrong Indication In Flare/Multiple Programmed Test (Continued)**

Procedure	No	Yes
<p>(8) Disconnect W4P1 from J4 on test set.</p> <p>(9) Does continuity exist from:</p> <p>For FCI D2 2, 65P-R002B/65P-R002A pin B to W4P1 pin B</p> <p>For FCI D2 3, 65P-R002B/65P-R002A pin C to W4P1 pin C</p> <p>For FCI D2 4, 65P-R002B/65P-R002A pin D to W4P1 pin D? .....</p>	d	f
<p>d. Do the substeps below:</p> <p>(1) Disconnect W4P2 from test adapter, and remove test adapter from right Dispenser Housing MX-7721/ALE-29A.</p> <p>(2) Remove right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).</p> <p>(3) Install test adapter in right Dispenser Housing MX-7721/ALE-29A, and connect W4P2 to test adapter.</p> <p>(4) Does continuity exist from:</p> <p>For FCI D2 2, P1 pin B to W4P1 pin B</p> <p>For FCI D2 3, P1 pin C to W4P1 pin C</p> <p>For FCI D2 4, P1 pin D to W4P1 pin D? .....</p>	g	e
<p>e. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) from:</p> <p>65P-R002B/65P-R002A pin B to 65J-R005 pin B</p> <p>65P-R002B/65P-R002A pin C to 65J-R005 pin C</p> <p>65P-R002B/65P-R002A pin D to 65J-R005 pin D. Do step r. ....</p>	-	-
<p>f. Replace right Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step r. ....</p>	-	-
<p>g. Replace right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step r. ....</p>	-	-
<p>h. Do the substeps below:</p> <p>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</p> <p>(2) On master arm control panel assembly, set MASTER switch to SAFE.</p> <p>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</p> <p>(4) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(5) Open door 39L (A1-F18AC-LMM-010).</p> <p>(6) On 161353 THRU 161521, disconnect 65P-P001B from left Electrical Switching Unit SA-1874/ALE-39.</p> <p>On 161522 AND UP, disconnect 65P-P001A from left Electrical Switching Unit SA-1874/ALE-39.</p>		

**Table 1. Wrong Indication In Flare/Multiple Programmed Test (Continued)**

Procedure	No	Yes
(7) Disconnect W3P1 from J3 on test set.		
(8) Does continuity exist from: For FCI D1 6, 65P-P001B/65P-P001A pin F to W3P1 pin F For FCI D1 7, 65P-P001B/65P-P001A pin G to W3P1 pin G For FCI D1 8, 65P-P001B/65P-P001A pin H to W3P1 pin H? .....	i	k
i. Do the substeps below:		
(1) Dispenser W4P2 from test adapter and remove test adapter from right Dispenser Housing MX-7721/ALE-29A.		
(2) Remove left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(3) Install test adapter in right Dispenser Housing MX-7721/ALE-29A and connect W4P2 to test adapter.		
(4) Does continuity exist from: For FCI D1 6, P1 pin F to W3P1 pin F For FCI D1 7, P1 pin G to W3P1 pin G For FCI D1 8, P1 pin H to W3P1 pin H? .....	l	j
j. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) from: 65J-P004 pin F to 65P-P001B/65P-P001A pin F 65J-P004 pin G to 65P-P001B/65P-P001A pin G 65J-P004 pin H to 65P-P001B/65P-P001A pin H. Do step r. ....	-	-
k. Replace left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step r. ....	-	-
l. Replace left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step r. ....	-	-
m. Do the substeps below:		
(1) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(2) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(3) On ECM control panel assembly, press and hold DISP switch. With multimeter set to RX1 scale, does continuity exist from: On F/A-18A, 65P-L003 pin M (+) to 65P-L003 pin D (-)? ..... On F/A-18B, 65P-K003 pin M (+) to 65P-K003 pin D (-)? .....	n n	q q
n. Do the substeps below:		
(1) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(2) Does continuity exist from:		



**Table 1. Wrong Indication In Flare/Multiple Programmed Test (Continued)**

Procedure	No	Yes
On F/A-18A, 65P-L003 pin M to 52P-H087 pin 12? .....	o	p
On F/A-18B, 65P-K003 pin M to 52P-H087 pin 12? .....	o	p
o. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step r. ....	-	-
p. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step r. ....	-	-
q. Replace Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step r. ....	-	-
r. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-R002B/65P-R002A		
(2) Right Dispenser Housing MX-7721/ALE-29A		
(3) 65P-P001B/65P-P001A		
(4) ECM Control Panel Assembly		
(5) Left Dispenser Housing MX-7721/ALE-29A		
(6) Programmer MX-9254/ALE-39		
(7) 65P-L003		
(8) W4P1		
(9) W3P1		
(10) Door 39L .....	-	-

**Table 2. Wrong Indications While Using Right Throttle Grip Chaff/Flare Dispenser Switch**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	

Table 2. Wrong Indications While Using Right Throttle Grip Chaff/Flare Dispenser Switch (Continued)

<div>NOTE</div> <p>Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.</p> <p>For locator, see WP008 00.</p> <p>Malfunction is caused by one of the items below:</p> <div>Aircraft Wiring ECM Control Panel Assembly Left Dispenser Housing MX-7721/ALE-29A Left Electrical Switching Unit SA-1874/ALE-39 Right Dispenser Housing MX-7721/ALE-29A Right Electrical Switching Unit SA-1874/ALE-39 Right Throttle Grip</div>		
Procedure	No	Yes
<div>CAUTION</div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <div>NOTE</div> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <div><div><div>1. Pin to pin test per procedural step.</div><div>2. Shorts to ground.</div><div>3. Shorts between surrounding pins on connectors.</div><div>4. Shorts between shield and conductors.</div><div>5. Shield continuity.</div></div></div>		
a. Did either the FCI D1 or the FCI D2 light come on? .....	l	b
b. Did the FCI D1 light come on? .....	h	c
c. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		

**Table 2. Wrong Indications While Using Right Throttle Grip Chaff/Flare Dispenser Switch (Continued)**

Procedure	No	Yes
(5) Open door 39R (A1-F18AC-LMM-010).		
(6) On 161353 THRU 161521, disconnect 65P-R002B from right Electrical Switching Unit SA-1874/ALE-39.		
(7) On 161522 AND UP, disconnect 65P-R002A from right Electrical Switching Unit SA-1874/ALE-39.		
(8) Disconnect W4P1 from J4 on test set.		
(9) Does continuity exist from 65P-R002B/65P-R002A pin E to W4P1 pin E? .....	d	g
d. Do the substeps below:		
(1) Disconnect W4P2 from test adapter, and remove test adapter from right Dispenser Housing MX-7721/ALE-29A.		
(2) Remove right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(3) Install test adapter in right Dispenser Housing MX-7721/ALE-29A, and connect W4P2 to test adapter.		
(4) Does continuity exist from P1 pin E to W4P1 pin E? .....	e	f
e. Replace right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step p. ....	-	-
f. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step p. ....	-	-
g. Replace right Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step p. ....	-	-
h. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Open door 39L (A1-F18AC-LMM-010).		
(6) On 161353 THRU 161521, disconnect 65P-P001B from left Electrical Switching Unit SA-1874/ALE-39.		
(7) On 161522 AND UP, disconnect 65P-P001A from left Electrical Switching Unit SA-1874/ALE-39.		

**Table 2. Wrong Indications While Using Right Throttle Grip Chaff/Flare Dispenser Switch (Continued)**

Procedure	No	Yes
(8) Disconnect W3P1 from J3 on test set.		
(9) Does continuity exist from 65P-P001B/65P-P001A pin J to W3P1 pin J? .....	i	k
i. Do the substeps below:		
(1) Disconnect W3P2 from test adapter, and remove test adapter from right Dispenser Housing MX-7721/ALE-29A.		
(2) Remove left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(3) Install test adapter in right Dispenser Housing MX-7721/ALE-29A, and connect W3P2 to test adapter.		
(4) Does continuity exist from P1 pin J to W3P1 pin J? .....	j	f
j. Replace left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-160-300, WP005 00). Do step p. ....	-	-
k. Replace left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step p. ....	-	-
l. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(6) With chaff/flare dispenser switch on the right throttle grip pushed aft, does continuity exist from 52P-H087 pin 6 to 52P-H087 pin 13? .....	m	o
m. Do the substeps below:		
(1) Do applicable part of right throttle grip removal (A1-F18AC-270-300, WP088 00) for access to 52J-H048.		
(2) Disconnect P1 from 52J-H048.		
(3) With chaff/flare dispenser switch pushed aft, does continuity exist from P1 pin 23 to P1 pin 21? .....	n	f
n. Replace right throttle grip (A1-F18AC-270-300, WP088 00). Do step p. ....	-	-
o. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step p. ....	-	-


**Table 2. Wrong Indications While Using Right Throttle Grip Chaff/Flare Dispenser Switch (Continued)**

Procedure	No	Yes
p. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 52J-H048		
(2) 65P-P001B/65P-P001A		
(3) 65P-R002B/65P-R002A		
(4) Left Dispenser Housing MX-7721/ALE-29A		
(5) Right Dispenser Housing MX-7721/ALE-29A		
(6) ECM control panel assembly		
(7) Door 39L		
(8) Door 39R .....	-	-

**Table 3. Test Set FCI D2 Light 11 Does Not Come On and Jammer Counter Indicates 19**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.	
For locator, see WP008 00.	
Malfunction is caused by one of the items below:	
Aircraft Wiring	
ECM Control Panel Assembly	
Programmer MX-9254/ALE-39	
Right Dispenser Housing MX-7721/ALE-29A	
Right Electrical Switching Unit SA-1874/ALE-39	

**Table 3. Test Set FCI D2 Light 11 Does Not Come On and Jammer Counter Indicates 19 (Continued)**

Procedure	No	Yes
<div style="text-align: center;">  <p>CAUTION</p> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol> </div>		
<p>a. Do the substeps below:</p> <ol style="list-style-type: none"> <li>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</li> <li>(2) On master arm control panel assembly, set MASTER switch to SAFE.</li> <li>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</li> <li>(4) Remove electrical power (A1-F18AC-LMM-000).</li> <li>(5) Disconnect W4P1 from J4 of test set.</li> <li>(6) Open door 39R (A1-F18AC-LMM-010).</li> <li>(7) On 161353 THRU 161521, disconnect 65P-R002B from right Electrical Switching Unit SA-1874/ALE-39.</li> <li>(8) On 161522 AND UP, disconnect 65P-R002A from right Electrical Switching Unit SA-1874/ALE-39.</li> <li>(9) Does continuity exist from 65P-R002B/65P-R002A pin L to W4P1 pin L? . . . . .</li> </ol>	b	e
<p>b. Do the substeps below:</p> <ol style="list-style-type: none"> <li>(1) Disconnect W4P2 from test adapter, and remove test adapter from right Dispenser Housing MX-7721/ALE-29A.</li> <li>(2) Remove right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).</li> </ol>		

**Table 3. Test Set FCI D2 Light 11 Does Not Come On and Jammer Counter Indicates 19 (Continued)**

Procedure	No	Yes
(3) Install test adapter in right Dispenser Housing MX-7721/ALE-29A, and connect W4P2 to test adapter.		
(4) Does continuity exist from P1 pin L to W4P1 pin L? .....	d	e
c. Isolate defective aircraft wiring from 65J-R005 pin L to 65P-R002B/65P-R002A pin L (A1-F18A( )-WDM-000). Do step k. ....	-	-
d. Replace right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step k. ....	-	-
e. Do the substeps below:		
(1) On 161353 THRU 161521, disconnect 65P-R002A from right Electrical Switching Unit SA-1874/ALE-39.		
On 161522 AND UP, disconnect 65P-R002B from right Electrical Switching Unit SA-1874/ALE-39.		
(2) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(3) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(4) Does continuity exist from:		
On F/A-18A, 65P-L003 pin V to 65P-R002A/65P-R002B pin E? .....	i	f
On F/A-18B, 65P-K003 pin V to 65P-R002A/65P-R002B pin E? .....	i	f
f. With DISP switch, on ECM control panel assembly, pressed and held, and multimeter set to the RX1 scale, does continuity exist from:		
On F/A-18A, 65P-L003 pin M (+) to 65P-L003 pin D (-) 65P-L003 pin J (+) to 65P-L003 pin D (-)? .....	g	h
On F/A-18B, 65P-K003 pin M (+) to 65P-K003 pin D (-) 65P-K003 pin J (+) to 65P-K003 pin D (-)? .....	g	h
g. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step k. ....	-	-
h. Do the substeps below:		
(1) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(2) Does continuity exist from 52J-H087 pin 30 to 52J-H087 pin 13? .....	g	j
i. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step k. ....	-	-
j. Malfunction has been isolated to the right Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00) or Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step k. ....	-	-

**Table 3. Test Set FCI D2 Light 11 Does Not Come On and Jammer Counter Indicates 19 (Continued)**


Procedure	No	Yes
k. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-R002A		
(2) 65P-R002B		
(3) 65P-L003		
(4) Programmer MX-9254/ALE-39		
(5) Right Dispenser Housing MX-7721/ALE-29A		
(6) ECM Control Panel Assembly		
(7) W4P1		
(8) Door 39R .....	-	-

**Table 4. Jammer Counter Does Not Indicate 19**

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
Materials Required	
None	
NOTE	
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.	
For locator, see WP008 00.	
Malfunction is caused by one of the items below:	
Aircraft Wiring	
ECM Control Panel Assembly	
Programmer MX-9254/ALE-39	



Table 4. Jammer Counter Does Not Indicate 19 (Continued)

Procedure	No	Yes
<div style="text-align: center;">  <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol> </div>		
a. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(6) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(7) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(8) Does continuity exist from 65P-L003/65P-K003 pin S to 52P-H087 pin 15? .....	b	c
b. Isolate aircraft defective wiring (A1-F18A( )-WDM-000). Do step d. ....	-	-
c. Malfunction has been isolated to the ECM control panel assembly (A1-F18AC-760-300, WP007 00) or Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step d. ....	-	-
d. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-L003/65P-K003		
(2) ECM control panel assembly		
(3) Programmer MX-9254/ALE-39 .....	-	-

**THIS PAGE INTENTIONALLY LEFT BLANK.**

## ORGANIZATIONAL MAINTENANCE

## TESTING AND TROUBLESHOOTING

## TROUBLESHOOTING - FUNCTIONAL TEST PART 4 USING AN/ALM-225 TEST SET

## COUNTERMEASURES DISPENSING SYSTEM

## Reference Material

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Line Maintenance Access Doors .....	A1-F18AC-LMM-010

## Alphabetical Index

Subject	Page No.
Table 1. Wrong Indication In Flare/Multiple Programmed Test .....	1
Table 2. Wrong Indications While Using Right Throttle Grip Chaff/Flare Dispenser Switch .....	5
Table 3. Pulse Light 10 Did Not Come On During S/F Pull Test .....	8
Table 4. Wrong Indication In S/F Pull Test .....	11
Table 5. Wrong Indication In Jammer Single Test .....	17
Table 6. Jammer Counter Does Not Indicate 19 .....	22

## Record of Applicable Technical Directives

None

Table 1. Wrong Indication In Flare/Multiple Programmed Test

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
Materials Required	
None	

Table 1. Wrong Indication In Flare/Multiple Programmed Test (Continued)

NOTE		
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.		
For locator, see WP008 00.		
Malfunction is caused by one of the items below:		
Aircraft Wiring		
ECM Control Panel Assembly		
Left Dispenser Housing MX-7721/ALE-29A		
Left Electrical Switching Unit SA-1874/ALE-39		
Programmer MX-9254/ALE-39		
Procedure	No	Yes
<div>CAUTION</div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p>NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>Pin to pin test per procedural step.</li><li>Shorts to ground.</li><li>Shorts between surrounding pins on connectors.</li><li>Shorts between shield and conductors.</li><li>Shield continuity.</li></ol>		
a. On ECM control panel assembly, does FLARE counter indicate 8? .....	b	e
b. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(6) With multimeter set to the RX1 scale, does continuity exist from 52J-H087 pin 44 (+) to pin 12 (-)? .....	c	d
c. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step j. ....	-	-


**Table 1. Wrong Indication In Flare/Multiple Programmed Test (Continued)**

Procedure	No	Yes
d. Replace Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step j. ....	-	-
e. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Open door 39L (A1-F18AC-LMM-010).		
(6) On 161353 THRU 161521, disconnect 65P-P001B from J1 on left Electrical Switching Unit SA-1874/ALE-39.		
On 161522 AND UP, disconnect 65P-P001A from J1 on left Electrical Switching Unit SA-1874/ALE-39.		
(7) Remove test set from left Dispenser Housing MX-7721/ALE-29A.		
(8) Connect W2P1 on test cable W2 to J1 on left Electrical Switching Unit SA-1874/ALE-39.		
(9) Connect W2P2 on test cable W2 to J4 on test set.		
(10) Apply electrical power (A1-F18AC-LMM-000).		
(11) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.		
(12) On master arm control assembly, set MASTER switch to ARM.		
(13) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.		
(14) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.		
(15) On ECM control panel assembly, set DISPENSER select switch to F/S.		
<b>NOTE</b>		
Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.		
(16) On Programmer MX-9254/ALE-39, pull RESET switch and set to RESET (hold for 10 seconds minimum).		
(17) On ECM control panel assembly, set DISPENSER select switch to S/F PULL.		
(18) During the flare salvo sequence, did pulse lights 6 through 8 come on and go off? .....	f	g

**Table 1. Wrong Indication In Flare/Multiple Programmed Test (Continued)**

Procedure	No	Yes
f. Replace left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step j. ....	-	-
g. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(6) For pulse lights that did not come on, does continuity exist from:		
Pulse light 6, 65P-P001A/65P-P001B pin F to 65J-P004 pin F		
Pulse light 7, 65P-P001A/65P-P001B pin G to 65J-P004 pin G		
Pulse light 8, 65P-P001A/65P-P001B pin H to 65J-P004 pin H? .....	h	i
h. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step j. ....	-	-
i. Replace left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step j. ....	-	-
j. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-P001A/65P-P001B		
(2) ECM Control Panel Assembly		
(3) Left Dispenser Housing MX-7721/ALE-29A		
(4) Programmer MX-9254/ALE-39		
(5) Door 39L .....	-	-

**Table 2. Wrong Indications While Using Right Throttle Grip Chaff/Flare Dispenser Switch**

<b>Support Equipment Required</b>		
<b>NOTE</b>  Alternate item type designations or part numbers are listed in parentheses.		
<b>Part Number or Type Designation</b>  260-6XLP (AN/USM-311)	<b>Nomenclature</b>  Multimeter	
<b>Materials Required</b>  None		
<b>NOTE</b>  Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.  For locator, see WP008 00.		
Malfunction is caused by one of the items below: <ul style="list-style-type: none"> <li>Aircraft Wiring</li> <li>ECM Control Panel Assembly</li> <li>Left Dispenser Housing MX-7721/ALE-29A</li> <li>Left Electrical Switching Unit SA-1874/ALE-39</li> </ul>		
<b>Procedure</b>	<b>No</b>	<b>Yes</b>
<div style="text-align: center; margin-bottom: 20px;">  </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
a. On ECM control panel assembly, does FLARE counter indicate 6? .....	g	b

**Table 2. Wrong Indications While Using Right Throttle Grip Chaff/Flare Dispenser Switch (Continued)**

Procedure	No	Yes
<p>b. Do the substeps below:</p> <ol style="list-style-type: none"> <li>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</li> <li>(2) On master arm control panel assembly, set MASTER switch to SAFE.</li> <li>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</li> <li>(4) Remove electrical power (A1-F18AC-LMM-000).</li> <li>(5) Remove test set from left Dispenser Housing MX-7721/ALE-29A.</li> <li>(6) Open door 39L (A1-F18AC-LMM-010).</li> <li>(7) On 161353 THRU 161521, disconnect 65P-P001B from J1 on left Electrical Switching Unit SA-1874/ALE-39.  On 161522 AND UP, disconnect 65P-P001A from J1 on left Electrical Switching Unit SA-1874/ALE-39.</li> <li>(8) Connect W2P1 on test cable W2 to J1 on left Electrical Switching Unit SA-1874/ALE-39.</li> <li>(9) Connect W2P2 on test cable W2 to J4 on test set.</li> <li>(10) Apply electrical power (A1-F18AC-LMM-000).</li> <li>(11) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.</li> <li>(12) On master arm control assembly, set MASTER switch to ARM.</li> <li>(13) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.</li> <li>(14) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.</li> <li>(15) On ECM control panel assembly, set DISPENSER select switch to C.</li> <li>(16) On Programmer MX-9254/ALE-39, set R20 switch to F.</li> </ol> <p style="text-align: center;"><b>NOTE</b></p> <p>Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.</p> <ol style="list-style-type: none"> <li>(17) Pull RESET switch and set to RESET (hold for 10 seconds minimum).</li> <li>(18) On ECM control panel assembly, set DISPENSER select switch to S/F PULL.</li> <li>(19) On test set, did pulse light 9 come on and go off during S/F PULL test? . . . . .</li> </ol>		
	f	c



**Table 2. Wrong Indications While Using Right Throttle Grip Chaff/Flare Dispenser Switch (Continued)**

Procedure	No	Yes
c. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(6) Does continuity exist from 65P-P001A/65P-P001B pin J to 66J-P004 pin J? .....	e	d
d. Replace left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step k. ....	-	-
e. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step k. ....	-	-
f. Replace left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step k. ....	-	-
g. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(6) With chaff/flare dispenser switch on the right throttle grip pushed aft, does continuity exist from 52P-H087 pin 6 to 52P-H087 pin 13? .....	h	j
h. Do the substeps below:		
(1) Do applicable part of right throttle grip removal (A1-F18AC-270-300, WP088 00) for access to 52J-H048.		
(2) Disconnect P1 from 52J-H048.		
(3) With chaff/flare dispenser switch pushed aft, does continuity exist from P1 pin 23 to P1 pin 21? .....	i	e
i. Replace right throttle grip (A1-F18AC-270-300, WP088 00). Do step k. ....	-	-
j. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step k. ....	-	-


**Table 2. Wrong Indications While Using Right Throttle Grip Chaff/Flare Dispenser Switch (Continued)**

Procedure	No	Yes
k. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 52J-H048		
(2) 65P-P001A/65P-P001B		
(3) Left Dispenser Housing MX-7721/ALE-29A		
(4) ECM control panel assembly		
(5) Door 39L .....	-	-

**Table 3. Pulse Light 10 Did Not Come On During S/F Pull Test**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-300, WP006 00) may be used with this procedure.	
For component locator, see WP008 00.	
Malfunction is caused by one of the items below:	
Aircraft Wiring	
ECM Control Panel Assembly	
Programmer MX-9254/ALE-39	
Left Dispenser Housing MX-7721/ALE-29A	
Left Electrical Switching Unit SA-1874/ALE-39	

**Table 3. Pulse Light 10 Did Not Come On During S/F Pull Test (Continued)**

Procedure	No	Yes
<div style="text-align: center;">  <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol> </div>		
a. Does FLARE counter indicate 0? .....	b	e
b. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(6) Set multimeter to the RX1 scale.		
(7) With DISPENSER select switch set and held to S/F PULL, does continuity exist from:		
52J-H087 pin 29 to pin 23		
52J-H087 pin 14 (+) to pin 13 (-)		
52J-H087 pin 12 (+) to pin 13 (-)? .....	c	d
c. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step j. ....	-	-
d. Replace Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step j. ....	-	-
e. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		

**Table 3. Pulse Light 10 Did Not Come On During S/F Pull Test (Continued)**

Procedure	No	Yes
<p>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</p> <p>(4) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(5) Remove test set from left Dispenser Housing MX-7721/ALE-29A.</p> <p>(6) Open door 39L (A1-F18AC-LMM-010).</p> <p>(7) On 161353 THRU 161521, disconnect 65P-P001B from J1 on left Electrical Switching Unit SA-1874/ALE-39.</p> <p>On 161522 AND UP, disconnect 65P-P001A from J1 on left Electrical Switching Unit SA-1874/ALE-39.</p> <p>(8) Connect W2P1 on test cable W2 to J1 on left Electrical Switching Unit SA-1874/ALE-39.</p> <p>(9) Connect W2P2 on test cable W2 to J4 on test set.</p> <p>(10) Apply electrical power (A1-F18AC-LMM-000).</p> <p>(11) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.</p> <p>(12) On master arm control assembly, set MASTER switch to ARM.</p> <p>(13) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.</p> <p>(14) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.</p> <p>(15) On ECM control panel assembly, set DISPENSER select switch to C.</p>		
<b>NOTE</b>		
Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.		
<p>(16) On Programmer MX-9254/ALE-39, pull RESET switch and set to RESET (hold for 10 seconds minimum).</p> <p>(17) On ECM control panel assembly, set DISPENSER select switch to S/F PULL.</p> <p>(18) On test set, did pulse light 10 come on and go off during S/F PULL test? . . . . .</p>	f	g
f. Replace left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step j. . . . .	-	-
g. Do the substeps below:		
<p>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</p> <p>(2) On master arm control panel assembly, set MASTER switch to SAFE.</p>		


**Table 3. Pulse Light 10 Did Not Come On During S/F Pull Test (Continued)**

Procedure	No	Yes
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(6) Does continuity exist from 65P-P001A/65P-P001B pin K to 65J-P004 pin K? . . . . .	h	i
h. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step j. . . . .	-	-
i. Replace left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step j. . . . .	-	-
j. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-P001A/65P-P001B		
(2) ECM Control Panel Assembly		
(3) Left Dispenser Housing MX-7721/ALE-29A		
(4) Door 39L . . . . .	-	-

**Table 4. Wrong Indication In S/F Pull Test**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.	
For locator, see WP008 00.	

**Table 4. Wrong Indication In S/F Pull Test (Continued)**

Malfunction is caused by one of the items below:		
Aircraft Wiring ECM Control Panel Assembly Programmer MX-9254/ALE-39 Right Dispenser Housing MX-7721/ALE-29A Right Electrical Switching Unit SA-1874/ALE-39		
Procedure	No	Yes
<div style="text-align: center;">  </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
a. On test set, did any pulse lights come on? .....	b	l
b. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove test set from right Dispenser Housing MX-7721/ALE-29A.		
(6) Open door 39R (A1-F18AC-LMM-010).		
(7) On 161353 THRU 161521, disconnect 65P-R002A from J2 on left Electrical Switching Unit SA-1874/ALE-39.		
On 161522 AND UP, disconnect 65P-R002B from J2 on left Electrical Switching Unit SA-1874/ALE-39.		
(8) Connect W1P3 on test cable W1 to 65P-R002B/65P-R002A.		
(9) Connect W1P1 on test cable W1 to J1 on test set.		

**Table 4. Wrong Indication In S/F Pull Test (Continued)**

Procedure	No	Yes
(10) Apply electrical power (A1-F18AC-LMM-000).		
(11) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.		
(12) On master arm control assembly, set MASTER switch to ARM.		
(13) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.		
(14) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.		
(15) On ECM control panel assembly, set DISPENSER select switch to C.		
(16) On Programmer MX-9254/ALE-39, pull RESET switch and set to RESET and hold.		
(17) On test set, does light D come on while RESET switch is set to RESET? .....	c	d
c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) from:		
On F/A-18A, 65P-L003 pin A to 65P-R002B pin D. Do step o. ....	-	-
On F/A-18B, 65P-K003 pin A to 65P-R002B pin D. Do step o. ....	-	-
d. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to S/F PULL.		
(2) On test set, did light B come on? .....	f	e
e. Replace right Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step o. ....	-	-
f. Do the substep below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Disconnect W1P3 from connector 65P-R002B/65P-R002A.		
(6) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(7) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(8) Apply electrical power (A1-F18AC-LMM-000).		

**Table 4. Wrong Indication In S/F Pull Test (Continued)**

Procedure	No	Yes
(9) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.		
(10) On master arm control assembly, set MASTER switch to ARM.		
(11) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.		
(12) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.		
(13) On ECM control panel assembly, set DISPENSER select switch to S/F PULL and hold.		
(14) Does 28vdc exist from:		
On 161353 THRU 161521, 65P-R002A pin B (+) to pin F (-)? .....	g	j
On 161522 AND UP, 65P-R002B pin B (+) to pin F (-)? .....	g	j
g. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Does continuity exist from:		
On 161353 THRU 161521, 65P-R002A pin F to aircraft ground? .....	h	i
On 161522 AND UP, 65P-R002B pin F to aircraft ground? .....	h	i
h. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step o. ....	-	-
i. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) from 65P-R002A/65P-R002B pin B to 52P-F058A pin B. Do step o. ....	-	-
j. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		




**Table 4. Wrong Indication In S/F Pull Test (Continued)**

Procedure	No	Yes
(6) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(7) Does continuity exist from:		
On F/A-18A, 65P-L003 pin P to 65P-R002A/65P-R002B pin A? .....	h	k
On F/A-18B, 65P-K003 pin P to 65P-R002A/65P-R002B pin A? .....	h	k
k. Replace Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step o. ....	-	-
l. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove test set from right Dispenser Housing MX-7721/ALE-29A.		
(6) Open door 39R (A1-F18AC-LMM-010).		
(7) On 161353 THRU 161521, disconnect 65P-R002B from J1 on left Electrical Switching Unit SA-1874/ALE-39.		
On 161522 AND UP, disconnect 65P-R002A from J1 on left Electrical Switching Unit SA-1874/ALE-39.		
(8) Connect W2P1 on test cable W2 to J1 on right Electrical Switching Unit SA-1874/ALE-39.		
(9) Connect W2P2 on test cable W2 to J4 on test set.		
(10) Apply electrical power (A1-F18AC-LMM-000).		
(11) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.		
(12) On master arm control assembly, set MASTER switch to ARM.		
(13) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.		
(14) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.		
(15) On ECM control panel assembly, set DISPENSER select switch to C.		

**Table 4. Wrong Indication In S/F Pull Test (Continued)**

Procedure	No	Yes
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.</p>		
(16) On Programmer MX-9254/ALE-39, pull RESET switch and set to RESET (hold for 10 seconds minimum).		
(17) On ECM control panel assembly, set DISPENSER select switch to S/F PULL.		
(18) On test set, did pulse lights 1 through 10 come on and go off? .....	m	e
m. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(6) For pulse light(s) that did not come on, does continuity exist from:		
For pulse light 1, 65P-R002A/65P-R002B pin A to 65J-R005 pin A		
For pulse light 2, 65P-R002A/65P-R002B pin B to 65J-R005 pin B		
For pulse light 3, 65P-R002A/65P-R002B pin C to 65J-R005 pin C		
For pulse light 4, 65P-R002A/65P-R002B pin D to 65J-R005 pin D		
For pulse light 5, 65P-R002A/65P-R002B pin E to 65J-R005 pin E		
For pulse light 6, 65P-R002A/65P-R002B pin F to 65J-R005 pin F		
For pulse light 7, 65P-R002A/65P-R002B pin G to 65J-R005 pin G		
For pulse light 8, 65P-R002A/65P-R002B pin H to 65J-R005 pin H		
For pulse light 9, 65P-R002A/65P-R002B pin J to 65J-R005 pin J		
For pulse light 10, 65P-R002A/65P-R002B pin K to 65J-R005 pin K? .....	h	n
n. Replace right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step o. ....	-	-
o. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-R002A		
(2) 65P-R002B		
(3) 65P-L003		
(4) Programmer MX-9254/ALE-39		
(5) Right Dispenser Housing MX-7721/ALE-29A		
(6) Door 39R .....	-	-

**Table 5. Wrong Indication In Jammer Single Test**

<b>Support Equipment Required</b>		
<b>NOTE</b>		
Alternate item type designations or part numbers are listed in parentheses.		
<b>Part Number or Type Designation</b>  260-6XLP (AN/USM-311)	<b>Nomenclature</b>  Multimeter	
<b>Materials Required</b>		
None		
<b>NOTE</b>		
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.		
For locator, see WP008 00.		
Malfunction is caused by one of the items below:		
Aircraft Wiring ECM Control Panel Assembly Programmer MX-9254/ALE-39 Right Dispenser Housing MX-7721/ALE-29A Right Electrical Switching Unit SA-1874/ALE-39		
<b>Procedure</b>	<b>No</b>	<b>Yes</b>
<div style="text-align: center; margin-bottom: 20px;">  </div> <p style="text-align: center;">To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
a. On ECM control panel assembly, does JAMMER counter indicate 19? .....	b	j

**Table 5. Wrong Indication In Jammer Single Test (Continued)**

Procedure	No	Yes
b. On test set, did pulse light 11 come on and go off? .....	c	g
c. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(6) On ECM control panel assembly, set DISPENSER select switch to J.		
(7) Does continuity exist from 52J-H087 pin 23 to pin 29? .....	d	e
d. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step p. ....	-	-
e. On ECM control panel assembly, press DISP switch, part of DISPENSER select switch. With multimeter set to RX1 scale, does continuity exist from:		
52J-H087 pin 12 (+) to pin 44 (-)		
52J-H087 pin 21 (+) to pin 44 (-)? .....	d	f
f. Replace Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step p. ....	-	-
g. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(6) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(7) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(8) Does continuity exist from:		
On F/A-18A, 65P-L003 pin S to 52P-H087 pin 15		
On F/A-18B, 65P-K003 pin S to 52P-H087 pin 15? .....	h	i
h. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step p. ....	-	-

**Table 5. Wrong Indication In Jammer Single Test (Continued)**

Procedure	No	Yes
i. Malfunction has been isolated to Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00) or ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step p. ....	-	-
j. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Open door 39R (A1-F18AC-LMM-010).		
(6) On 161353 THRU 161521, disconnect 65P-R002B from J1 on right Electrical Switching Unit SA-1874/ALE-39.		
On 161522 AND UP, disconnect 65P-R002A from J1 on right Electrical Switching Unit SA-1874/ALE-39.		
(7) Remove test set from right Dispenser Housing MX-7721/ALE-29A.		
(8) Connect W2P1 on test cable W2 to J1 on right Electrical Switching Unit SA-1874/ALE-39.		
(9) Connect W2P2 on test cable W2 to J4 on test set.		
(10) Apply electrical power (A1-F18AC-LMM-000).		
(11) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.		
(12) On master arm control assembly, set MASTER switch to ARM.		
(13) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.		
(14) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.		
(15) On ECM control panel assembly, set DISPENSER select switch to J.		
<b>NOTE</b>		
Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.		
(16) On Programmer MX-9254/ALE-39, pull RESET switch and set to RESET (hold for 10 seconds minimum).		
(17) On ECM control panel assembly, press DISP switch, part of DISPENSER select switch.		

**Table 5. Wrong Indication In Jammer Single Test (Continued)**

Procedure	No	Yes
<p>(18) On test set, did pulse light 11 come on and go off? .....</p> <p>k. Do the substeps below:</p> <p>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</p> <p>(2) On master arm control panel assembly, set MASTER switch to SAFE.</p> <p>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</p> <p>(4) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(5) Disconnect test cable W2 from right Electrical Switching Unit SA-1874/ALE-39 and from test set.</p> <p>(6) On 161353 THRU 161521, disconnect 65P-R002A from J2 on right Electrical Switching Unit SA-1874/ALE-39.</p> <p>On 161522 AND UP, disconnect 65P-R002B from J2 on right Electrical Switching Unit SA-1874/ALE-39.</p> <p>(7) Connect W1P3 on test cable W1 to 65P-R002A/65P-R002B.</p> <p>(8) Connect W1P1 on test cable W1 to J1 on test set.</p> <p>(9) Apply electrical power (A1-F18AC-LMM-000).</p> <p>(10) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.</p> <p>(11) On master arm control assembly, set MASTER switch to ARM.</p> <p>(12) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.</p> <p>(13) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.</p> <p>(14) On ECM control panel assembly, set DISPENSER select switch to J.</p>	k	n
<b>NOTE</b>		
Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.		
<p>(15) On Programmer MX-9254/ALE-39, pull RESET switch and set to RESET (hold for 10 seconds minimum).</p> <p>(16) On ECM control panel assembly, press DISP switch, part of DISPENSER select switch.</p>		
(17) On test set, did light C come on and go off .....	l	m

Table 5. Wrong Indication In Jammer Single Test (Continued)

Procedure	No	Yes
l. Do the substeps below: <ul style="list-style-type: none"> <li>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</li> <li>(2) On master arm control panel assembly, set MASTER switch to SAFE.</li> <li>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</li> <li>(4) Remove electrical power (A1-F18AC-LMM-000).</li> <li>(5) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.</li> <li>(6) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).</li> <li>(7) Disconnect W1P3 from 65P-R002A/65P-R002B.</li> <li>(8) Does continuity exist from:               <ul style="list-style-type: none"> <li>On F/A-18A, 65P-R002A/65P-R002B pin E to 66P-L003 pin v</li> <li>On F/A-18B, 65P-R002A/65P-R002B pin E to 65P-K003 pin v? .....</li> </ul> </li> </ul>	h	f
m. Replace right Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step p. ....	-	-
n. Do the substeps below: <ul style="list-style-type: none"> <li>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</li> <li>(2) On master arm control panel assembly, set MASTER switch to SAFE.</li> <li>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR to NORM.</li> <li>(4) Remove electrical power (A1-F18AC-LMM-000).</li> <li>(5) Remove right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).</li> <li>(6) Does continuity exist from:               <ul style="list-style-type: none"> <li>On 161353 THRU 161521, 65P-R002B pin L to 65J-R005 pin L? .....</li> <li>On 161522 AND UP, 65P-R002A pin L to 65J-R005 pin L? .....</li> </ul> </li> </ul>	h h	o o
o. Replace right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step p. ....	-	-
p. If disconnected, removed, or opened during this procedure, make sure the items listed are connected, installed, or closed: <ul style="list-style-type: none"> <li>(1) 65P-L003</li> </ul>		

**Table 5. Wrong Indication In Jammer Single Test (Continued)**


Procedure	No	Yes
(2) 65P-R002A		
(3) 65P-R002B		
(4) ECM Control Panel Assembly		
(5) Programmer MX-9254/ALE-39		
(6) Right Dispenser Housing MX-7721/ALE-29A		
(7) Door 39R . . . . .	-	-

**Table 6. Jammer Counter Does Not Indicate 19**

<b>Support Equipment Required</b>	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.	
For locator, see WP008 00.	
Malfunction is caused by one of the items below:	
Aircraft Wiring	
ECM Control Panel Assembly	
Programmer MX-9254/ALE-39	



**Table 6. Jammer Counter Does Not Indicate 19 (Continued)**

Procedure	No	Yes
<div style="text-align: center;">  <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol> </div>		
a. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(6) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(7) On F/A-18B, remove Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(8) Does continuity exist from 65P-L003/65P-K003 pin S to 52P-H087 pin 15? .....	b	c
b. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step d. ....	-	-
c. Malfunction has been isolated to the ECM control panel assembly (A1-F18AC-760-300, WP007 00) or Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step d. ....	-	-
d. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-L003/65P-K003		
(2) ECM control panel assembly		
(3) Programmer MX-9254/ALE-39 .....	-	-

**THIS PAGE INTENTIONALLY LEFT BLANK.**

## ORGANIZATIONAL MAINTENANCE

## TESTING AND TROUBLESHOOTING

## TROUBLESHOOTING - FUNCTIONAL TEST PART 5 USING AN/ALM-70A TEST SET

## COUNTERMEASURES DISPENSING SYSTEM

## Reference Material

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Line Maintenance Access Doors .....	A1-F18AC-LMM-010

## Alphabetical Index

Subject	Page No.
Table 1. Test Set FCI D2 Lights 12 Through 15 Do Not Come On .....	1
Table 2. Wrong Indications in S/F PULL Test .....	5
Table 3. Test Set FCI D2 Lights 16 Through 19 Do Not Come On Correctly .....	9
Table 4. Test Set FCI D2 Lights 20 Through 23 Do Not Come On Correctly .....	11
Table 5. Test Set FCI D2 Lights 24 Through 27 Do Not Come On Correctly .....	14
Table 6. Test Set FCI D2 Lights 28 Through 30 Do Not Come On Correctly .....	16

## Record of Applicable Technical Directives

None

Table 1. Test Set FCI D2 Lights 12 Through 15 Do Not Come On

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
Materials Required	
None	

**Table 1. Test Set FCI D2 Lights 12 Through 15 Do Not Come On (Continued)**

NOTE		
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.		
For locator, see WP008 00.		
Malfunction is caused by one of the items below:		
Aircraft Wiring ECM Control Panel Assembly Programmer MX-9254/ALE-39 Right Dispenser Housing MX-7721/ALE-29A Right Electrical Switching Unit SA-1874/ALE-39		
Procedure	No	Yes
<div style="text-align: center;"><b>CAUTION</b></div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
a. On ECM control panel assembly, does JAMMER counter indicate 15? .....	b	g
b. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) On F/A-18A, disconnect 65P-L003 from Programmer MX-9254/ALE-39.		
(6) On F/A-18B, remove Program MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00).		
(7) On ECM control panel assembly, set DISPENSER select switch to J.		


**Table 1. Test Set FCI D2 Lights 12 Through 15 Do Not Come On (Continued)**

Procedure	No	Yes
(8) With multimeter set to the RX1 scale, does continuity exist from:		
On F/A-18A, 65P-L003 pin M (+) to 65P-L003 pin D (-) 65P-L003 pin U (+) to 65P-L003 pin D (-) 65P-L003 pin J (+) to 65P-L003 pin D (-)? .....	c	f
On F/A-18B, 65P-K003 pin M (+) to 65P-K003 pin D (-) 65P-K003 pin U (+) to 65P-K003 pin D (-) 65P-K003 pin J (+) to 65P-K003 pin D (-)? .....	c	f
c. Do the substeps below:		
(1) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(2) With multimeter set to the RX1 scale, does continuity exist from:		
On F/A-18A, 52P-H087 pin 12 to 65P-L003 pin M 52P-H087 pin 14 to 65P-L003 pin U 52P-H087 pin 21 to 65P-L003 pin J? .....	d	e
On F/A-18B, 52P-H087 pin 12 to 65P-K003 pin M 52P-H087 pin 14 to 65P-K003 pin U 52P-H087 pin 21 to 65P-K003 pin J? .....	d	e
d. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step 1. ....	-	-
e. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step 1. ....	-	-
f. Replace Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step 1. ....	-	-
g. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR, and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Open door 39R (A1-F18AC-LMM-010).		
(6) On 161353 THRU 161521, disconnect 65P-R002B from right Electrical Switching Unit SA-1874/ALE-39.		
On 161522 AND UP, disconnect 65P-R002A from right Electrical Switching Unit SA-1874/ALE-39.		
(7) Disconnect W4P1 from J4 on test set.		

**Table 1. Test Set FCI D2 Lights 12 Through 15 Do Not Come On (Continued)**

Procedure	No	Yes
<p>(8) Does continuity exist from:</p> <p>For FCI D2 12, 65P-R002B/65P-R002A pin M to W4P1 pin M</p> <p>For FCI D2 13, 65P-R002B/65P-R002A pin N to W4P1 pin N</p> <p>For FCI D2 14, 65P-R002B/65P-R002A pin P to W4P1 pin P</p> <p>For FCI D2 15, 65P-R002B/65P-R002A pin R to W4P1 pin R? .....</p>	h	k
<p>h. Do the substeps below:</p> <p>(1) Disconnect W4P2 from test adapter, and remove test adapter from right Dispenser Housing MX-7721/ALE-29A.</p> <p>(2) Remove right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).</p> <p>(3) Install test adapter in right Dispenser Housing MX-7721/ALE-29A, and connect W4P2 to test adapter.</p> <p>(4) Does continuity exist from:</p> <p>For FCI D2 12, P1 pin M to W4P1 pin M</p> <p>For FCI D2 13, P1 pin N to W4P1 pin N</p> <p>For FCI D2 14, P1 pin P to W4P1 pin P</p> <p>For FCI D2 15, P1 pin R to W4P1 pin R? .....</p>	i	j
<p>i. Replace right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step l. ....</p>	-	-
<p>j. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) from:</p> <p>65P-R002B/65P-R002A pin M to 65J-R005 pin M</p> <p>65P-R002B/65P-R002A pin N to 65J-R005 pin N</p> <p>65P-R002B/65P-R002A pin P to 65J-R005 pin P</p> <p>65P-R002B/65P-R002A pin R to 65J-R005 pin R. Do step l .....</p>	-	-
<p>k. Replace right Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step l. ....</p>	-	-
<p>l. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:</p> <p>(1) 65P-R002B/65P-R002A</p> <p>(2) 65P-L003</p> <p>(3) 65P-K003</p> <p>(4) Door 39R</p> <p>(5) Programmer MX-9254/ALE-39</p> <p>(6) ECM control panel assembly</p> <p>(7) Right Dispenser Housing MX-7721/ALE-29A</p> <p>(8) W4P1 .....</p>	-	-

**Table 2. Wrong Indications in S/F PULL Test**

Support Equipment Required		
<b>NOTE</b>		
Alternate item type designations or part numbers are listed in parentheses.		
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>	
260-6XLP (AN/USM-311)	Multimeter	
<b>Materials Required</b>		
None		
<b>NOTE</b>		
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.		
For locator, see WP008 00.		
Malfunction is caused by one of the items below:		
Aircraft Wiring ECM Control Panel Assembly Left Dispenser Housing MX-7721/ALE-29A Left Electrical Switching Unit SA-1874/ALE-39 Programmer MX-9254/ALE-39 Right Dispenser Housing MX-7721/ALE-29A Right Electrical Switching Unit SA-1874/ALE-39		
Procedure	No	Yes
<div></div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>1. Pin to pin test per procedural step.</li><li>2. Shorts to ground.</li><li>3. Shorts between surrounding pins on connectors.</li><li>4. Shorts between shield and conductors.</li><li>5. Shield continuity.</li></ol>		

**Table 2. Wrong Indications in S/F PULL Test (Continued)**

Procedure	No	Yes
a. On ECM control panel assembly, does FLARE counter indicate six flares remaining? . . . . .	b	m
b. Did FCI D1 number 10 light come on? . . . . .	c	h
c. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Open door 39L (A1-F18AC-LMM-010).		
(6) On 161353 THRU 161521, disconnect 65P-P001B from left Electrical Switching Unit SA-1874/ALE-39.		
(7) On 161522 AND UP, disconnect 65P-P001A from left Electrical Switching Unit SA-1874/ALE-39.		
(8) Disconnect W3P1 from J3 on test set.		
(9) Does continuity exist from 65P-P001B/65P-P001A pin K to W3P1 pin K? . . . . .	d	g
d. Do the substeps below:		
(1) Disconnect W3P2 from test adapter, and remove test adapter from left Dispenser Housing MX-7721/ALE-29A.		
(2) Remove left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(3) Install test adapter in left Dispenser Housing MX-7721/ALE-29A, and connect W3P2 to test adapter.		
(4) Does continuity exist from P1 pin K to W3P1 pin K? . . . . .	e	f
e. Replace left Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step p. . . . .	-	-
f. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step p . . . . .	-	-
g. Replace left Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step p. . . . .	-	-
h. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		




**Table 2. Wrong Indications in S/F PULL Test (Continued)**

Procedure	No	Yes
<p>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</p> <p>(4) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(5) Open door 39R (A1-F18AC-LMM-010).</p> <p>(6) On 161353 THRU 161521, disconnect 65P-R002B from right Electrical Switching Unit SA-1874/ALE-39.</p> <p>(7) On 161522 AND UP, disconnect 65P-R002A from right Electrical Switching Unit SA-1874/ALE-39.</p> <p>(8) Disconnect W4P1 from J4 on test set.</p> <p>(9) Does continuity exist from:</p> <p style="padding-left: 40px;">For FCI D2 6, 65P-R002B/65P-R002A pin F to W4P1 pin F</p> <p style="padding-left: 40px;">For FCI D2 7, 65P-R002B/65P-R002A pin G to W4P1 pin G</p> <p style="padding-left: 40px;">For FCI D2 8, 65P-R002B/65P-R002A pin H to W4P1 pin H</p> <p style="padding-left: 40px;">For FCI D2 9, 65P-R002B/65P-R002A pin J to W4P1 pin J</p> <p style="padding-left: 40px;">For FCI D2 10, 65P-R002B/65P-R002A pin K to W4P1 pin K? .....</p>	i	l
<p>i. Do the substeps below:</p> <p>(1) Disconnect W4P1 from test adapter, and remove test adapter from right Dispenser Housing MX-7721/ALE-29A.</p> <p>(2) Remove right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).</p> <p>(3) Install test adapter in right Dispenser Housing MX-7721/ALE-29A, and connect W4P1 to test adapter.</p> <p>(4) Does continuity exist from:</p> <p style="padding-left: 40px;">For FCI D2 6, P1 pin F to W4P1 pin F</p> <p style="padding-left: 40px;">For FCI D2 7, P1 pin G to W4P1 pin G</p> <p style="padding-left: 40px;">For FCI D2 8, P1 pin H to W4P1 pin H</p> <p style="padding-left: 40px;">For FCI D2 9, P1 pin J to W4P1 pin J</p> <p style="padding-left: 40px;">For FCI D2 10, P1 pin K to W4P1 pin K? .....</p>	i	k
<p>j. Replace right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step p. ....</p>	-	-
<p>k. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) from:</p> <p style="padding-left: 40px;">65J-R005 pin F to 65P-R002B/65P-R002A pin F</p> <p style="padding-left: 40px;">65J-R005 pin G to 65P-R002B/65P-R002A pin G</p> <p style="padding-left: 40px;">65J-R005 pin H to 65P-R002B/65P-R002A pin H</p> <p style="padding-left: 40px;">65J-R005 pin J to 65P-R002B/65P-R002A pin J</p> <p style="padding-left: 40px;">65J-R005 pin K to 65P-R002B/65P-R002A pin K. Do step p. ....</p>	-	-

**Table 2. Wrong Indications in S/F PULL Test (Continued)**

Procedure	No	Yes
l. Replace right Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step p. ....	-	-
m. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR, and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(6) On ECM control panel assembly, set DISPENSER select switch to S/F PULL.		
(7) Does continuity exist from:		
52J-H087 pin 23 to 52J-H087 pin 29		
52J-H087 pin 12 (+) to 52J-H087 pin 13 (-)		
52J-H087 pin 14 (+) to 52J-H087 pin 13 (-)		
52J-H087 pin 30 to 52J-H087 pin 13? .....	n	o
n. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step p. ....	-	-
o. Replace Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step p. ....	-	-
p. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-P001B/65P-P001A		
(2) 65P-R002B/65P-R002A		
(3) P1		
(4) Left Dispenser Housing MX-7721/ALE-29A		
(5) Right Dispenser Housing MX-7721/ALE-29A		
(6) ECM control panel assembly		
(7) Door 39L		
(8) Door 39R		
(9) W3P1		
(10) W4P1 .....	-	-

**Table 3. Test Set FCI D2 Lights 16 Through 19 Do Not Come On Correctly**

<b>Support Equipment Required</b>		
<b>NOTE</b>		
Alternate item type designations or part numbers are listed in parentheses.		
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>	
260-6XLP (AN/USM-311)	Multimeter	
<b>Materials Required</b>		
None		
<b>NOTE</b>		
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.		
For locator, see WP008 00.		
Malfunction is caused by one of the items below:		
Aircraft Wiring		
Right Dispenser Housing MX-7721/ALE-29A		
Right Electrical Switching Unit SA-1874/ALE-39		
<b>Procedure</b>	<b>No</b>	<b>Yes</b>
<div></div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>1. Pin to pin test per procedural step.</li><li>2. Shorts to ground.</li><li>3. Shorts between surrounding pins on connectors.</li><li>4. Shorts between shield and conductors.</li><li>5. Shield continuity.</li></ol>		

**Table 3. Test Set FCI D2 Lights 16 Through 19 Do Not Come On Correctly  
(Continued)**

Procedure	No	Yes
<p>a. Do the substeps below:</p> <p>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</p> <p>(2) On master arm control panel assembly, set MASTER switch to SAFE.</p> <p>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</p> <p>(4) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(5) Disconnect W4P1 from J4 on test set.</p> <p>(6) Open door 39R (A1-F18AC-LMM-010).</p> <p>(7) On 161353 THRU 161521, disconnect 65P-R002B from right Electrical Switching Unit SA-1874/ALE-39.</p> <p>(8) On 161522 AND UP, disconnect 65P-R002A from right Electrical Switching Unit SA-1874/ALE-39.</p> <p>(9) Does continuity exist from:</p> <p>For FCI D2 16, 65P-R002B/65P-R002A pin S to W4P1 pin S</p> <p>For FCI D2 17, 65P-R002B/65P-R002A pin T to W4P1 pin T</p> <p>For FCI D2 18, 65P-R002B/65P-R002A pin U to W4P1 pin U</p> <p>For FCI D2 19, 65P-R002B/65P-R002A pin V to W4P1 pin V? .....</p>	b	e
<p>b. Do the substeps below:</p> <p>(1) Disconnect W4P2 from test adapter, and remove test adapter from right Dispenser Housing MX-7721/ALE-29A.</p> <p>(2) Remove right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).</p> <p>(3) Install test adapter in right Dispenser Housing MX-7721/ALE-29A, and connect W4P2 to test adapter.</p> <p>(4) Does continuity exist from:</p> <p>For FCI D2 16, P1 pin S to W4P1 pin S</p> <p>For FCI D2 17, P1 pin T to W4P1 pin T</p> <p>For FCI D2 18, P1 pin U to W4P1 pin U</p> <p>For FCI D2 19, P1 pin V to W4P1 pin V? .....</p>	d	c


**Table 3. Test Set FCI D2 Lights 16 Through 19 Do Not Come On Correctly  
(Continued)**

Procedure	No	Yes
c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) from:  65J-R005 pin S to 65P-R002B/65P-R002A pin S 65J-R005 pin T to 65P-R002B/65P-R002A pin T 65J-R005 pin U to 65P-R002B/65P-R002A pin U 65J-R005 pin V to 65P-R002B/65P-R002A pin V. Do step f. ....	-	-
d. Replace right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step f. ....	-	-
e. Replace right Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:  (1) 65P-R002B/65P-R002A (2) Right Dispenser Housing MX-7721/ALE-29A (3) W4P1 (4) Door 39R .....	-	-

**Table 4. Test Set FCI D2 Lights 20 Through 23 Do Not Come On Correctly**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.	
For locator, see WP008 00.	


**Table 4. Test Set FCI D2 Lights 20 Through 23 Do Not Come On Correctly  
(Continued)**

Malfunction is caused by one of the items below:		
Aircraft Wiring Right Dispenser Housing MX-7721/ALE-29A Right Electrical Switching Unit SA-1874/ALE-39		
Procedure	No	Yes
<div style="text-align: center;">  <p>CAUTION</p> </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
a. Do the substeps below: <ol style="list-style-type: none"> <li>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</li> <li>(2) On master arm control panel assembly, set MASTER switch to SAFE.</li> <li>(3) On proximity switch control, set NOSE GEAR and MAIN GEAR switch to NORM.</li> <li>(4) Remove electrical power (A1-F18AC-LMM-000).</li> <li>(5) Disconnect W4P1 from J4 on test set.</li> <li>(6) Open door 39R (A1-F18AC-LMM-010).</li> <li>(7) On 161353 THRU 161521, disconnect 65P-R002B from right Electrical Switching Unit SA-1874/ALE-39.</li> <li>(8) On 161522 AND UP, disconnect 65P-R002A from right Electrical Switching Unit SA-1874/ALE-39.</li> <li>(9) Does continuity exist from: <div style="margin-left: 20px;"> For FCI D2 20, 65P-R002B/65P-R002A pin W to W4P1 pin W  For FCI D2 21, 65P-R002B/65P-R002A pin X to W4P1 pin X  For FCI D2 22, 65P-R002B/65P-R002A pin Y to W4P1 pin Y  For FCI D2 23, 65P-R002B/65P-R002A pin Z to W4P1 pin Z? ..... </div> </li> </ol>	b	e

**Table 4. Test Set FCI D2 Lights 20 Through 23 Do Not Come On Correctly  
(Continued)**

Procedure	No	Yes
<p>b. Do the substeps below:</p> <p>(1) Disconnect W4P2 from test adapter, and remove test adapter from right Dispenser Housing MX-7721/ALE-29A.</p> <p>(2) Remove right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).</p> <p>(3) Install test adapter in right Dispenser Housing MX-7721/ALE-29A, and connect W4P2 to test adapter.</p> <p>(4) Does continuity exist from:</p> <p>For FCI D2 20, P1 pin W to W4P1 pin W</p> <p>For FCI D2 21, P1 pin X to W4P1 pin X</p> <p>For FCI D2 22, P1 pin Y to W4P1 pin Y</p> <p>For FCI D2 23, P1 pin Z to W4P1 pin Z? .....</p>	d	c
<p>c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) from:</p> <p>65J-R005 pin W to 65P-R002B/65P-R002A pin W</p> <p>65J-R005 pin X to 65P-R002B/65P-R002A pin X</p> <p>65J-R005 pin Y to 65P-R002B/65P-R002A pin Y</p> <p>65J-R005 pin Z to 65P-R002B/65P-R002A pin Z. Do step f. ....</p>	-	-
<p>d. Replace right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step f. ....</p>	-	-
<p>e. Replace right Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step f. ....</p>	-	-
<p>f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:</p> <p>(1) 65P-R002B/65P-R002A</p> <p>(2) Right Dispenser Housing MX-7721/ALE-29A</p> <p>(3) W4P1</p> <p>(4) Door 39R .....</p>	-	-

**Table 5. Test Set FCI D2 Lights 24 Through 27 Do Not Come On Correctly**

<b>Support Equipment Required</b>		
<b>NOTE</b>		
Alternate item type designations or part numbers are listed in parentheses.		
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>	
260-6XLP (AN/USM-311)	Multimeter	
<b>Materials Required</b>		
None		
<b>NOTE</b>		
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.		
For locator, see WP008 00.		
Malfunction is caused by one of the items below:		
Aircraft Wiring Right Dispenser Housing MX-7721/ALE-29A Right Electrical Switching Unit SA-1874/ALE-39		
<b>Procedure</b>	<b>No</b>	<b>Yes</b>
		
To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.		
<b>NOTE</b>		
The question used in logic tree “Does continuity exist” means to test for the items listed below:		
<ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		



**Table 5. Test Set FCI D2 Lights 24 Through 27 Do Not Come On Correctly  
(Continued)**

Procedure	No	Yes
<p>a. Do the substeps below:</p> <p>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</p> <p>(2) On master arm control panel assembly, set MASTER switch to SAFE.</p> <p>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</p> <p>(4) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(5) Disconnect W4P1 from J4 on test set.</p> <p>(6) Open door 39R (A1-F18AC-LMM-010).</p> <p>(7) On 161353 THRU 161521, disconnect 65P-R002B from right Electrical Switching Unit SA-1874/ALE-39.</p> <p>(8) On 161522 AND UP, disconnect 65P-R002A from right Electrical Switching Unit SA-1874/ALE-39.</p> <p>(9) Does continuity exist from:</p> <p>For FCI D2 24, 65P-R002B/65P-R002A pin a to W4P1 pin a</p> <p>For FCI D2 25, 65P-R002B/65P-R002A pin b to W4P1 pin b</p> <p>For FCI D2 26, 65P-R002B/65P-R002A pin c to W4P1 pin c</p> <p>For FCI D2 27, 65P-R002B/65P-R002A pin d to W4P1 pin d? .....</p>	b	e
<p>b. Do the substeps below:</p> <p>(1) Disconnect W4P2 from test adapter, and remove test adapter from right Dispenser Housing MX-7721/ALE-29A.</p> <p>(2) Remove right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).</p> <p>(3) Install test adapter in right Dispenser Housing MX-7721/ALE-29A, and connect W4P2 to test adapter.</p> <p>(4) Does continuity exist from:</p> <p>For FCI D2 24, P1 pin a to W4P1 pin a</p> <p>For FCI D2 25, P1 pin b to W4P1 pin b</p> <p>For FCI D2 26, P1 pin c to W4P1 pin c</p> <p>For FCI D2 27, P1 pin d to W4P1 pin d? .....</p>	d	c


**Table 5. Test Set FCI D2 Lights 24 Through 27 Do Not Come On Correctly  
(Continued)**

Procedure	No	Yes
c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) from:  65J-R005 pin a to 65P-R002B/65P-R002A pin a 65J-R005 pin b to 65P-R002B/65P-R002A pin b 65J-R005 pin c to 65P-R002B/65P-R002A pin c 65J-R005 pin d to 65P-R002B/65P-R002A pin d. Do step f. ....	-	-
d. Replace right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step f. ....	-	-
e. Replace right Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:  (1) 65P-R002B/65P-R002A (2) Right Dispenser Housing MX-7721/ALE-29A (3) W4P1 (4) Door 39R .....	-	-

**Table 6. Test Set FCI D2 Lights 28 Through 30 Do Not Come On Correctly**

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
Materials Required	
None	
NOTE	
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.	
For locator, see WP008 00.	

**Table 6. Test Set FCI D2 Lights 28 Through 30 Do Not Come On Correctly  
(Continued)**

Malfunction is caused by one of the items below:		
Aircraft Wiring Right Dispenser Housing MX-7721/ALE-29A Right Electrical Switching Unit SA-1874/ALE-39		
Procedure	No	Yes
<div style="text-align: center;">  <p>CAUTION</p> </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
<p>a. Do the substeps below:</p> <ol style="list-style-type: none"> <li>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</li> <li>(2) On master arm control panel assembly, set MASTER switch to SAFE.</li> <li>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</li> <li>(4) Remove electrical power (A1-F18AC-LMM-000).</li> <li>(5) Disconnect W4P1 from J4 on test set.</li> <li>(6) Open door 39R (A1-F18AC-LMM-010).</li> <li>(7) On 161353 THRU 161521, disconnect 65P-R002B from right Electrical Switching Unit SA-1874/ALE-39.</li> <li>(8) On 161522 AND UP, disconnect 65P-R002A from right Electrical Switching Unit SA-1874/ALE-39.</li> <li>(9) Does continuity exist from: <p>For FCI D2 28, 65P-R002B/65P-R002A pin e to W4P1 pin e  For FCI D2 29, 65P-R002B/65P-R002A pin f to W4P1 pin f  For FCI D2 30, 65P-R002B/65P-R002A pin g to W4P1 pin g? .....</p> </li> </ol>	b	e

**Table 6. Test Set FCI D2 Lights 28 Through 30 Do Not Come On Correctly  
(Continued)**

Procedure	No	Yes
b. Do the substeps below: <p>(1) Disconnect W4P2 from test adapter, and remove test adapter from right Dispenser Housing MX-7721/ALE-29A.</p> <p>(2) Remove right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).</p> <p>(3) Install test adapter in right Dispenser Housing MX-7721/ALE-29A, and connect W4P2 to test adapter.</p> <p>(4) Does continuity exist from:</p> <p>For FCI D2 28, P1 pin e to W4P1 pin e</p> <p>For FCI D2 29, P1 pin f to W4P1 pin f</p> <p>For FCI D2 30, P1 pin g to W4P1 pin g? .....</p>	d	c
c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000) from: <p>65J-R005 pin e to 65P-R002B/65P-R002A pin e</p> <p>65J-R005 pin f to 65P-R002B/65P-R002A pin f</p> <p>65J-R005 pin g to 65P-R002B/65P-R002A pin g. Do step f. ....</p>	-	-
d. Replace right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step f. ....	-	-
e. Replace right Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed: <p>(1) 65P-R002B/65P-R002A</p> <p>(2) Right Dispenser Housing MX-7721/ALE-29A</p> <p>(3) W4P1</p> <p>(4) Door 39R .....</p>	-	-

---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TROUBLESHOOTING - FUNCTIONAL TEST PART 5 USING AN/ALM-225 TEST SET**  
**COUNTERMEASURES DISPENSING SYSTEM**

---

**Reference Material**

Line Maintenance Procedures . . . . . A1-F18AC-LMM-000  
Line Maintenance Access Doors . . . . . A1-F18AC-LMM-010

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Table 1. Test Set Pulse Lights 12 Through 15 Do Not Come On . . . . .	1
Table 2. Test Set Pulse Lights 16 Through 19 Do Not Come On Correctly . . . . .	5
Table 3. Test Set Pulse Lights 20 Through 23 Do Not Come On Correctly . . . . .	7
Table 4. Test Set Pulse Lights 24 Through 27 Do Not Come On Correctly . . . . .	10
Table 5. Test Set Pulse Lights 28 Through 30 Do Not Come On Correctly . . . . .	13

**Record of Applicable Technical Directives**

None

**Table 1. Test Set Pulse Lights 12 Through 15 Do Not Come On**

<b>Support Equipment Required</b>	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.	
For locator, see WP008 00.	

Table 1. Test Set Pulse Lights 12 Through 15 Do Not Come On (Continued)

Malfunction is caused by one of the items below:  Aircraft Wiring ECM Control Panel Assembly Programmer MX-9254/ALE-39 Right Dispenser Housing MX-7721/ALE-29A Right Electrical Switching Unit SA-1874/ALE-39		
Procedure	No	Yes
<div>CAUTION</div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p>NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>Pin to pin test per procedural step.</li><li>Shorts to ground.</li><li>Shorts between surrounding pins on connectors.</li><li>Shorts between shield and conductors.</li><li>Shield continuity.</li></ol>		
a. On ECM control panel assembly, does JAMMER counter indicate 15? .....	b	e
b. Do the substeps below:  (1) On ECM control panel assembly, set DISPENSER select switch to OFF.  (2) On master arm control panel assembly, set MASTER switch to SAFE.  (3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.  (4) Remove electrical power (A1-F18AC-LMM-000).  (5) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).  (6) Set multimeter to RX1 scale.  (7) On ECM control panel assembly, set DISPENSER select switch to J.  (8) With DISP switch pressed and held, does continuity exist from:  52P-H087 pin 12 (+) to pin 44 (-) 52P-H087 pin 14 (+) to pin 44 (-) 52P-H087 pin 21 (+) to pin 44 (-)? .....		
c. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step j. ....	-	-

**Table 1. Test Set Pulse Lights 12 Through 15 Do Not Come On (Continued)**

Procedure	No	Yes
d. Replace Programmer MX-9254/ALE-39 (A1-F18AC-760-300, WP006 00). Do step j. . . . .	-	-
e. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove test set from right Dispenser Housing MX-7721/ALE-29A.		
(6) Open door 39R (A1-F18AC-LMM-010).		
(7) On 161353 THRU 161521, disconnect 65P-R002B from J1 on right Electrical Switching Unit SA-1874/ALE-39.		
On 161522 AND UP, disconnect 65P-R002A from J1 on right Electrical Switching Unit SA-1874/ALE-39.		
(8) Connect W2P1 on test cable W2 to J1 on right Electrical Switching Unit SA-1874/ALE-39.		
(9) Connect W2P2 on test cable W2 to J4 on test set.		
(10) Apply electrical power (A1-F18AC-LMM-000).		
(11) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.		
(12) On master arm control assembly, set MASTER switch to ARM.		
(13) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.		
(14) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.		
(15) On ECM control panel assembly, set DISPENSER select switch to J.		
<b>NOTE</b>		
Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.		
(16) On Programmer MX-9254/ALE-39, pull RESET switch and set to RESET (hold for 10 seconds minimum).		
(17) On ECM control panel assembly, set MODE SEL switch to SNGL.		
(18) Press DISP switch, part of DISPENSER select switch (ignore test set pulse light 11 coming on and going off).		

**Table 1. Test Set Pulse Lights 12 Through 15 Do Not Come On (Continued)**

Procedure	No	Yes
(19) Set MODE SEL switch to PRGM.		
(20) Press DISP switch, part of DISPENSER select switch.		
(21) On test set, did pulse lights 12 through 15 come on and go off? .....	f	g
f. Replace right Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step j. ....	-	-
g. Do the substeps below:		
(1) On ECM control panel assembly, set DISPENSER select switch to OFF.		
(2) On master arm control panel assembly, set MASTER switch to SAFE.		
(3) On proximity switch control, set NOSE GEAR, and RIGHT MAIN GEAR switches to NORM.		
(4) Remove electrical power (A1-F18AC-LMM-000).		
(5) Remove right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(6) For pulse light(s) that did not come on, does continuity exist from:		
For pulse light 12, 65P-R002A/65P-R002B pin M to 65J-R005 pin M		
For pulse light 13, 65P-R002A/65P-R002B pin N to 65J-R005 pin N		
For pulse light 14, 65P-R002A/65P-R002B pin P to 65J-R005 pin P		
For pulse light 15, 65P-R002A/65P-R002B pin R to 65J-R005 pin R? .....	h	i
h. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step j. ....	-	-
i. Replace right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step j. ....	-	-
j. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-R002A/65P-R002B		
(2) Door 39R		
(3) ECM control panel assembly		
(4) Right Dispenser Housing MX-7721/ALE-29A .....	-	-



**Table 2. Test Set Pulse Lights 16 Through 19 Do Not Come On Correctly**

Support Equipment Required		
NOTE		
Alternate item type designations or part numbers are listed in parentheses.		
Part Number or Type Designation	Nomenclature	
260-6XLP (AN/USM-311)	Multimeter	
Materials Required		
None		
NOTE		
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.		
For locator, see WP008 00.		
Malfunction is caused by one of the items below:		
Aircraft Wiring		
Right Dispenser Housing MX-7721/ALE-29A		
Right Electrical Switching Unit SA-1874/ALE-39		
Procedure	No	Yes
<div>CAUTION</div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p>NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>Pin to pin test per procedural step.</li><li>Shorts to ground.</li><li>Shorts between surrounding pins on connectors.</li><li>Shorts between shield and conductors.</li><li>Shield continuity.</li></ol> <p>a. Do the substeps below:</p> <p>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</p>		

**Table 2. Test Set Pulse Lights 16 Through 19 Do Not Come On Correctly  
(Continued)**

Procedure	No	Yes
<p>(2) On master arm control panel assembly, set MASTER switch to SAFE.</p> <p>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</p> <p>(4) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(5) Remove test set from right Dispenser Housing MX-7721/ALE-29A.</p> <p>(6) Open door 39R (A1-F18AC-LMM-010).</p> <p>(7) On 161353 THRU 161521, disconnect 65P-R002B from J1 on right Electrical Switching Unit SA-1874/ALE-39.</p> <p>On 161522 AND UP, disconnect 65P-R002A from J1 on right Electrical Switching Unit SA-1874/ALE-39.</p> <p>(8) Connect W2P1 on test cable W2 to J1 on right Electrical Switching Unit SA-1874/ALE-39.</p> <p>(9) Connect W2P2 on test cable W2 to J4 on test set.</p> <p>(10) Apply electrical power (A1-F18AC-LMM-000).</p> <p>(11) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.</p> <p>(12) On master arm control assembly, set MASTER switch to ARM.</p> <p>(13) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.</p> <p>(14) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.</p> <p>(15) On Programmer MX-9254/ALE-39, set R20 switch to F.</p> <p>(16) On ECM control panel assembly, set DISPENSER select switch to C.</p>		
<b>NOTE</b>		
Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.		
<p>(17) On Programmer MX-9254/ALE-39, pull RESET switch and set to RESET (hold for 10 seconds minimum).</p> <p>(18) On ECM control panel assembly, set DISPENSER select switch to S/F PULL.</p> <p>(19) On test set, did pulse lights 16 through 19 come on and go off during S/F PULL test? .....</p>	b	c
<p>b. Replace right Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step f. ....</p>	-	-


**Table 2. Test Set Pulse Lights 16 Through 19 Do Not Come On Correctly  
(Continued)**

Procedure	No	Yes
c. Do the substeps below:		
(1) Remove right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).		
(2) For pulse light(s) that did not come on, does continuity exit from:		
For pulse light 16, 65P-R002A/65P-R002B pin S to 65J-R005 pin S		
For pulse light 17, 65P-R002A/65P-R002B pin T to 65J-R005 pin T		
For pulse light 18, 65P-R002A/65P-R002B pin U to 65J-R005 pin U		
For pulse light 19, 65P-R002A/65P-R002B pin V to 65J-R005 pin V? .....	d	e
d. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step f. ....	-	-
e. Replace right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-R002A/65P-R002B		
(2) Right Dispenser Housing MX-7721/ALE-29A		
(3) Door 39R .....	-	-

**Table 3. Test Set Pulse Lights 20 Through 23 Do Not Come On Correctly**

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
Materials Required	
None	

**Table 3. Test Set Pulse Lights 20 Through 23 Do Not Come On Correctly  
(Continued)**

NOTE		
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.		
For locator, see WP008 00.		
Malfunction is caused by one of the items below:		
Aircraft Wiring		
Right Dispenser Housing MX-7721/ALE-29A		
Right Electrical Switching Unit SA-1874/ALE-39		
Procedure	No	Yes
<div style="text-align: center;">  </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <div style="text-align: center;"> <b>NOTE</b> </div> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
<p>a. Do the substeps below:</p> <ol style="list-style-type: none"> <li>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</li> <li>(2) On master arm control panel assembly, set MASTER switch to SAFE.</li> <li>(3) On proximity switch control, set NOSE GEAR and MAIN GEAR switches to NORM.</li> <li>(4) Remove electrical power (A1-F18AC-LMM-000).</li> <li>(5) Remove test set from right Dispenser Housing MX-7721/ALE-29A.</li> <li>(6) Open door 39R (A1-F18AC-LMM-010).</li> <li>(7) On 161353 THRU 161521, disconnect 65P-R002B from J1 on right Electrical Switching Unit SA-1874/ALE-39.</li> </ol> <p>On 161522 AND UP, disconnect 65P-R002A from J1 on right Electrical Switching Unit SA-1874/ALE-39.</p>		

**Table 3. Test Set Pulse Lights 20 Through 23 Do Not Come On Correctly  
(Continued)**

Procedure	No	Yes
<p>(8) Connect W2P1 on test cable W2 to J1 on right Electrical Switching Unit SA-1874/ALE-39.</p> <p>(9) Connect W2P2 on test cable W2 to J4 on test set.</p> <p>(10) Apply electrical power (A1-F18AC-LMM-000).</p> <p>(11) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.</p> <p>(12) On master arm control assembly, set MASTER switch to ARM.</p> <p>(13) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.</p> <p>(14) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.</p> <p>(15) On Programmer MX-9254/ALE-39, set R20 switch to F.</p> <p>(16) On ECM control panel assembly, set DISPENSER select switch to C.</p>		
<p><b>NOTE</b></p> <p>Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.</p>		
<p>(17) On Programmer MX-9254/ALE-39, pull RESET switch and set to RESET (hold for 10 seconds minimum).</p> <p>(18) On ECM control panel assembly, set DISPENSER select switch to S/F PULL.</p> <p>(19) On test set, did pulse lights 20 through 23 come on and go off during S/F PULL test? .....</p>	b	c
<p>b. Replace right Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step f. ....</p>	-	-
<p>c. Do the substeps below:</p> <p>(1) Remove right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).</p> <p>(2) For pulse light(s) that did not come on, does continuity exist from:</p> <p>For pulse light 20, 65P-R002A/65P-R002B pin W to 65J-R005 pin W</p> <p>For pulse light 21, 65P-R002A/65P-R002B pin X to 65J-R005 pin X</p> <p>For pulse light 22, 65P-R002A/65P-R002B pin Y to 65J-R005 pin Y</p> <p>For pulse light 23, 65P-R002A/65P-R002B pin Z to 65J-R005 pin Z? .....</p>	d	e
<p>d. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step f. ....</p>	-	-


**Table 3. Test Set Pulse Lights 20 Through 23 Do Not Come On Correctly  
(Continued)**

Procedure	No	Yes
e. Replace right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-R002A/65P-R002B		
(2) Right Dispenser Housing MX-7721/ALE-29A		
(3) Door 39R .....	-	-

**Table 4. Test Set Pulse Lights 24 Through 27 Do Not Come On Correctly**

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
Materials Required	
None	
NOTE	
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.	
For locator, see WP008 00.	
Malfunction is caused by one of the items below:	
Aircraft Wiring	
Right Dispenser Housing MX-7721/ALE-29A	
Right Electrical Switching Unit SA-1874/ALE-39	

**Table 4. Test Set Pulse Lights 24 Through 27 Do Not Come On Correctly  
(Continued)**


Procedure	No	Yes
<div style="text-align: center;">  <p>CAUTION</p> </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
<p>a. Do the substeps below:</p> <ol style="list-style-type: none"> <li>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</li> <li>(2) On master arm control panel assembly, set MASTER switch to SAFE.</li> <li>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</li> <li>(4) Remove electrical power (A1-F18AC-LMM-000).</li> <li>(5) Remove test set from right Dispenser Housing MX-7721/ALE-29A.</li> <li>(6) Open door 39R (A1-F18AC-LMM-010).</li> <li>(7) On 161353 THRU 161521, disconnect 65P-R002B from J1 on right Electrical Switching Unit SA-1874/ALE-39.</li> <li>On 161522 AND UP, disconnect 65P-R002A from J1 on right Electrical Switching Unit SA-1874/ALE-39.</li> <li>(8) Connect W2P1 on test cable W2 to J1 on right Electrical Switching Unit SA-1874/ALE-39.</li> <li>(9) Connect W2P2 on test cable W2 to J4 on test set.</li> <li>(10) Apply electrical power (A1-F18AC-LMM-000).</li> <li>(11) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.</li> <li>(12) On master arm control assembly, set MASTER switch to ARM.</li> </ol>		

**Table 4. Test Set Pulse Lights 24 Through 27 Do Not Come On Correctly  
(Continued)**

Procedure	No	Yes
<p>(13) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.</p> <p>(14) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.</p> <p>(15) On Programmer MX-9254/ALE-39, set R20 switch to F.</p> <p>(16) On ECM control panel assembly, set DISPENSER select switch to C.</p>		
<b>NOTE</b>		
Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.		
<p>(17) On Programmer MX-9254/ALE-39, pull RESET switch and set to RESET (hold for 10 seconds minimum).</p> <p>(18) On ECM control panel assembly, set DISPENSER select switch to S/F PULL.</p> <p>(19) On test set, did pulse lights 24 through 27 come on and go off during S/F PULL test? .....</p>	b	c
b. Replace right Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step f. ....	-	-
c. Do the substeps below:		
<p>(1) Remove right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP006 00).</p> <p>(2) For pulse lights that did not come on, does continuity exist from:</p> <p style="padding-left: 40px;">For pulse light 24, 65P-R002A/65P-R002B pin a to 65J-R005 pin a</p> <p style="padding-left: 40px;">For pulse light 25, 65P-R002A/65P-R002B pin b to 65J-R005 pin b</p> <p style="padding-left: 40px;">For pulse light 26, 65P-R002A/65P-R002B pin c to 65J-R005 pin c</p> <p style="padding-left: 40px;">For pulse light 27, 65P-R002A/65P-R002B pin d to 65J-R005 pin d? .....</p>	d	e
d. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step f. ....	-	-
e. Replace right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
<p>(1) 65P-R002A/65P-R002B</p> <p>(2) Right Dispenser Housing MX-7721/ALE-29A</p> <p>(3) Door 39R .....</p>	-	-



**Table 5. Test Set Pulse Lights 28 Through 30 Do Not Come On Correctly**

Support Equipment Required				
<b>NOTE</b>				
Alternate item type designations or part numbers are listed in parentheses.				
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>			
260-6XLP (AN/USM-311)	Multimeter			
<b>Materials Required</b>				
None				
<b>NOTE</b>				
Countermeasures Dispensing System Functional Schematic (A1-F18AC-760-500, WP006 00) may be used with this procedure.				
For locator, see WP008 00.				
Malfunction is caused by one of the items below:				
Aircraft Wiring				
Right Dispenser Housing MX-7721/ALE-29A				
Right Electrical Switching Unit SA-1874/ALE-39				
Procedure	No	Yes		
<div></div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>1. Pin to pin test per procedural step.</li><li>2. Shorts to ground.</li><li>3. Shorts between surrounding pins on connectors.</li><li>4. Shorts between shield and conductors.</li><li>5. Shield continuity.</li></ol> <div><div>a. Do the substeps below:</div><div><div>(1) On ECM control panel assembly, set DISPENSER select switch to OFF.</div><div>(2) On master arm control panel assembly, set MASTER switch to SAFE.</div></div></div>				

**Table 5. Test Set Pulse Lights 28 Through 30 Do Not Come On Correctly  
(Continued)**

Procedure	No	Yes
<p>(3) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to NORM.</p> <p>(4) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(5) Remove test set from right Dispenser Housing MX-7721/ALE-29A.</p> <p>(6) Open door 39R (A1-F18AC-LMM-010).</p> <p>(7) On 161353 THRU 161521, disconnect 65P-R002B from J1 on right Electrical Switching Unit SA-1874/ALE-39.</p> <p>On 161522 AND UP, disconnect 65P-R002A from J1 on right Electrical Switching Unit SA-1874/ALE-39.</p> <p>(8) Connect W2P1 on test cable W2 to J1 on right Electrical Switching Unit SA-1874/ALE-39.</p> <p>(9) Connect W2P2 on test cable W2 to J4 on test set.</p> <p>(10) Apply electrical power (A1-F18AC-LMM-000).</p> <p>(11) On proximity switch control, set NOSE GEAR and RIGHT MAIN GEAR switches to WT OFF WHLS.</p> <p>(12) On master arm control assembly, set MASTER switch to ARM.</p> <p>(13) In nose wheelwell, set ARMAMENT OVERRIDE switch to OVERRIDE.</p> <p>(14) On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.</p> <p>(15) On Programmer MX-9254/ALE-39, set R20 switch to F.</p> <p>(16) On ECM control panel assembly, set DISPENSER select switch to C.</p>		
<b>NOTE</b>		
Failure to hold RESET switch in RESET for at least 10 seconds may result in abnormal indications.		
<p>(17) On Programmer MX-9254/ALE-39, pull RESET switch and set to RESET (hold for 10 seconds minimum).</p> <p>(18) On ECM control panel assembly, set DISPENSER select switch to S/F PULL.</p> <p>(19) On test set, did pulse lights 28 through 30 come on and go off during S/F PULL test? .....</p>	b	c
b. Replace right Electrical Switching Unit SA-1874/ALE-39 (A1-F18AC-760-300, WP004 00). Do step f. ....	-	-
c. Do the substeps below:		
<p>(1) Remove right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00).</p>		

**Table 5. Test Set Pulse Lights 28 Through 30 Do Not Come On Correctly  
(Continued)**

Procedure	No	Yes
<p>(2) For pulse light(s) that did not come on, does continuity exist from:</p> <p>For pulse light 28, 65P-R002A/65P-R002B pin e to 65J-R006 pin e</p> <p>For pulse light 29, 65P-R002A/65P-R002B pin f to 65J-R005 pin f</p> <p>For pulse light 30, 65P-R002A/65P-R002B pin g to 65J-R005 pin g? . . . . .</p>	d	e
d. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step f. . . . .	-	-
e. Replace right Dispenser Housing MX-7721/ALE-29A (A1-F18AC-760-300, WP005 00). Do step f. . . . .	-	-
f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 65P-R002A/65P-R002B		
(2) Right Dispenser Housing MX-7721/ALE-29A		
(3) Door 39R . . . . .	-	-

**THIS PAGE INTENTIONALLY LEFT BLANK.**

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TESTING - BUILT-IN TEST**  
**COUNTERMEASURES SET**

**Reference Material**

Line Maintenance Procedures ..... A1-F18AC-LMM-000

**Alphabetical Index**

**Subject**

**Page No.**

Table 1. Countermeasures Set Built-In Test ..... 1

**Record of Applicable Technical Directives**

Type/ Number	Date	Title and ECP No.	Date Incorp.	Remarks
F18 AFC 50	16 Oct 84	Tactical Electronic Warfare Systems, ALR-67 Countermeasures Modification of (ECP MDA-F/A-18-003R1 C1/C2/C3)	1 Oct 84	—

**Table 1. Countermeasures Set Built-In Test**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p style="text-align: center;"><b>System Required Components</b></p> <p style="text-align: center;">All system components installed.</p> <p style="text-align: center;"><b>Related Systems Required</b></p> <p style="text-align: center;">Avionics Cooling System Electrical System Intercommunication and Audio System</p> <p style="text-align: center;"><b>Support Equipment Required</b></p> <p style="text-align: center;">None</p> <p style="text-align: center;"><b>Materials Required</b></p> <p style="text-align: center;">None</p>		

**Table 1. Countermeasures Set Built-In Test (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p style="text-align: center;"><b>NOTE</b></p> <p>If a malfunction occurs during this test, make sure circuit breakers listed in WP015 00 are closed.</p> <p>For component locator, refer to WP015 00.</p>		
<p>1. PRELIMINARY.</p> <p>a. Connect cockpit intercommunication equipment (A1-F18AC-LMM-000).</p> <p>b. Apply electrical power (A1-F18AC-LMM-000).</p> <p>c. On GND PWR control panel assembly, set and hold 3 and 4 switches to A ON for three seconds.</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p>Omit steps d and e when Receiver-Transmitter RT-1079B/ALQ-126 is installed, or on 161702 THRU 162852 AFTER F/A-18 AFC 50 when Receiver-Transmitter RT-1079A/ALQ-126 is installed.</p>		
<p>d. On intercommunication amplifier-control, set ECM VOL control to mid position.</p> <p>e. On F/A-18B, on volume control panel assembly, set ECM VOL control to mid position.</p>		
<p>2. PROCEDURE.</p> <p>a. On ECM control panel assembly, set ECM mode switch to STBY.</p>	<p>On LH advisory and threat warning indicator panel, STBY light comes on. Light goes off in approximately 4 minutes.</p>	<p>1. STBY light did not come on, do table 1, WP016 00.</p> <p>2. STBY light did not go off, do table 2, WP016 00.</p>

Table 1. Countermeasures Set Built-In Test (Continued)


Procedure	Normal Indication	Remedy for Abnormal Indication
<div style="text-align: center;">  <p>Do not set ECM mode switch to REC while in the general vicinity of a transmitting radar or damage to the Receiver-Transmitter RT-1079( )/ALQ-126 will result.</p> <p><b>NOTE</b></p> <p>Observe local radio and radar operating regulations while doing the test to prevent violating security.</p> </div>		
b. Set ECM mode switch to BIT.	1. On LH advisory and threat warning panel: <ul style="list-style-type: none"> <li>a. REC light comes on in approximately 5 seconds.</li> <li>b. RPT light flashes 3 times.</li> <li>c. Go light comes on in approximately 20 seconds.</li> </ul> 2. On 161353 THRU 161528; ALSO 161702 THRU 162852 BEFORE F/A-18 AFC 50, when Receiver-Transmitter RT-1079A/ALQ-126 is installed, audio tone is heard in headset (using EMC VOL control, adjust audio tone to comfortable level).	Do table 3, WP016 00.  Do table 1, WP017 00.  1. If NO GO light comes on, replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00).  2. If neither GO nor NO GO light come on, do table 2, WP017 00.  1. No Audio, do table 3, WP017 00.  2. Cockpit audio not variable, replace intercommunication amplifier-control (A1-F18AC-600-300, WP012 00).  3. On F/A-18B, no audio at headset in rear cockpit, replace intercommunication amplifier-control (A1-F18AC-600-300, WP012 00).  4. On F/A-18B, audio not variable in rear cockpit, do table 4, WP017 00.
c. Set ECM mode select switch to OFF.	All lights off.	Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00).

Table 1. Countermeasures Set Built-In Test (Continued)

Procedure	Normal Indication	Remedy for Abnormal Indication
3. FINAL.  a. Remove electrical power (A1- F18AC-LMM-000).  b. Remove cockpit intercommunication equipment (A1-F18AC-LMM-000).		



---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**LOCATOR**  
**COUNTERMEASURES SET**

---

**Reference Material**

None

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Countermeasures Set Locator, Figure 1 .....	2

**Record of Applicable Technical Directives**

<b>Type/ Number</b>	<b>Date</b>	<b>Title and ECP No.</b>	<b>Date Incorp.</b>	<b>Remarks</b>
F18 AFC 50	16 Oct 84	Tactical Electronic Warfare Systems, ALR-67 Countermeasures Modification of (ECP MDA-F/A-18-003R1 C1/C2/C3)	1 Mar 88	—
AFC-253	—	US Naval Reserves A+ Avionics Upgrade; Incorporation of (ECP MDA-F/A-18-0560R1)	1 Jan 01	—
AFC-292	—	US Marine Corps Reserves A+ Avionics Upgrade; Incorporation of (ECP MDA-F/A-18-0583)	1 Jan 01	—

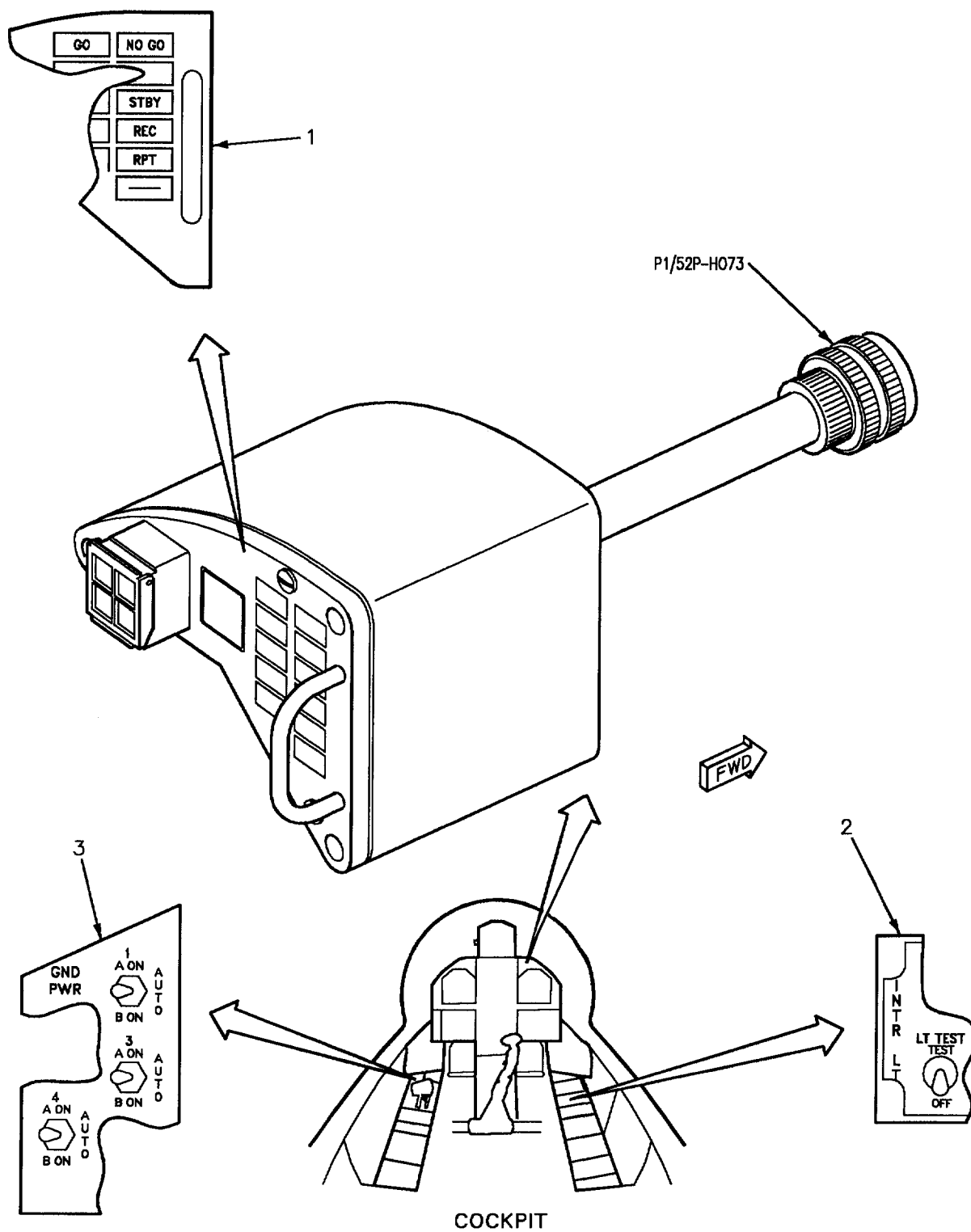


Figure 1. Countermeasures Set Locator (Sheet 1)

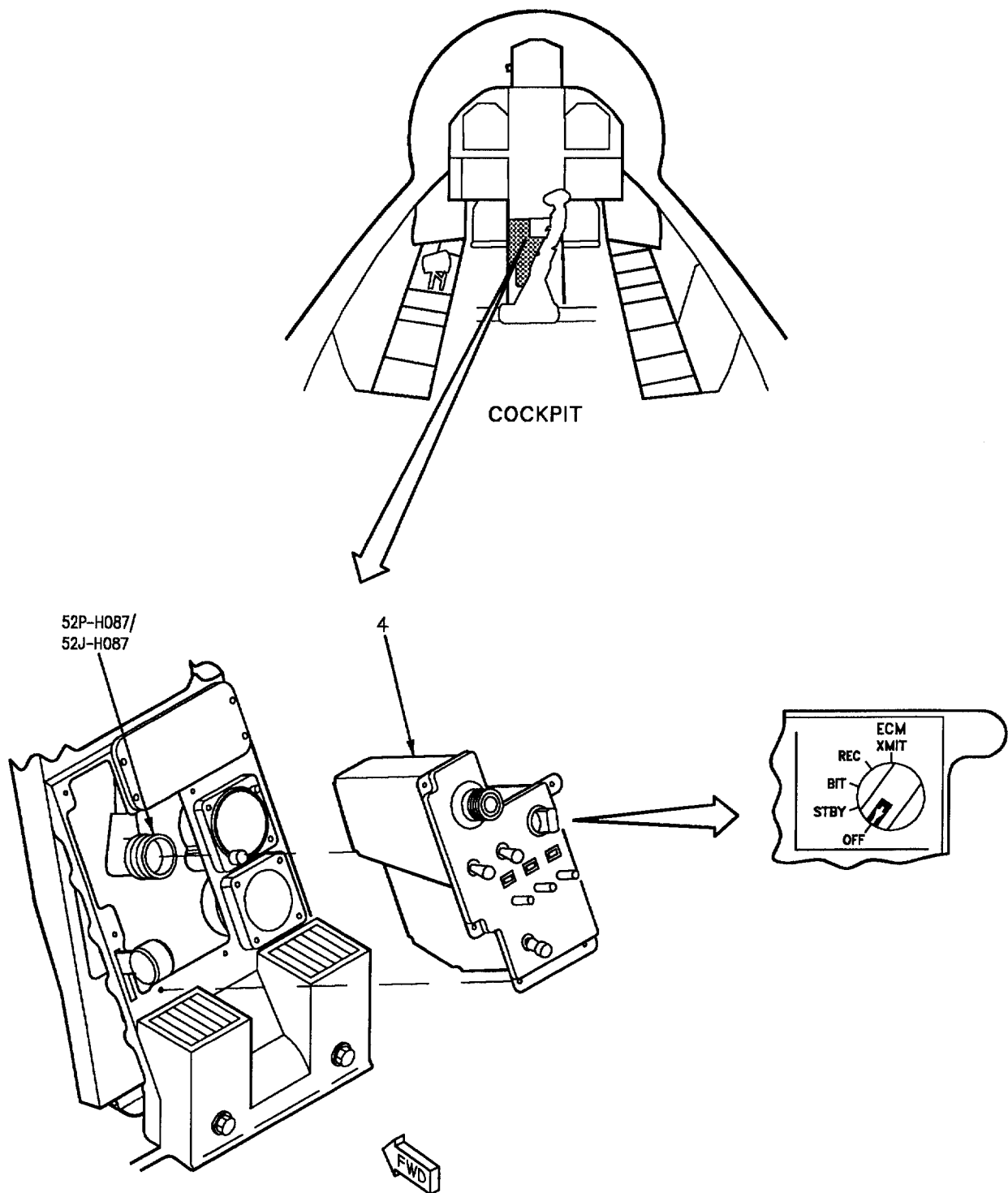


Figure 1. Countermeasures Set Locator (Sheet 2)

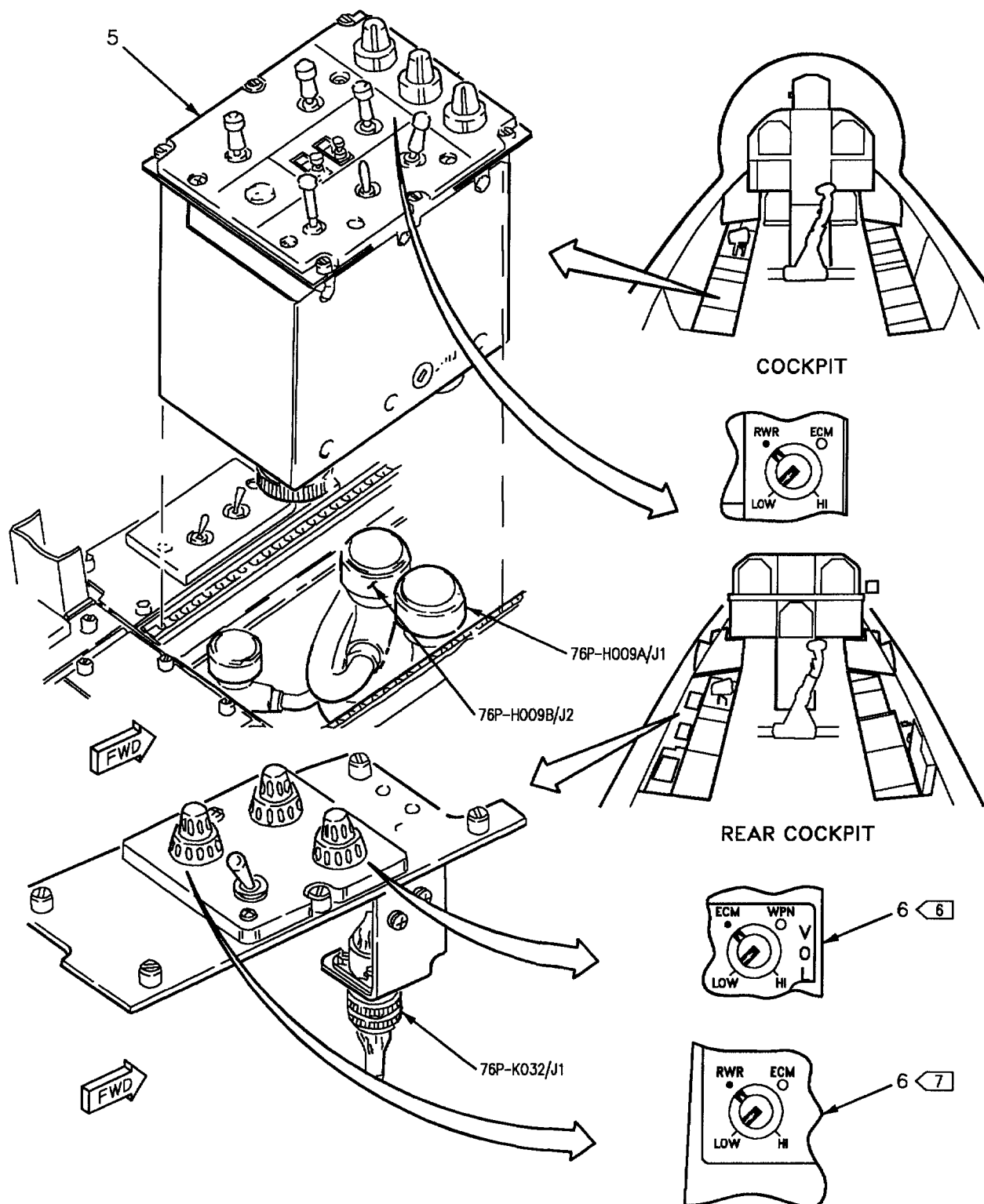


Figure 1. Countermeasures Set Locator (Sheet 3)

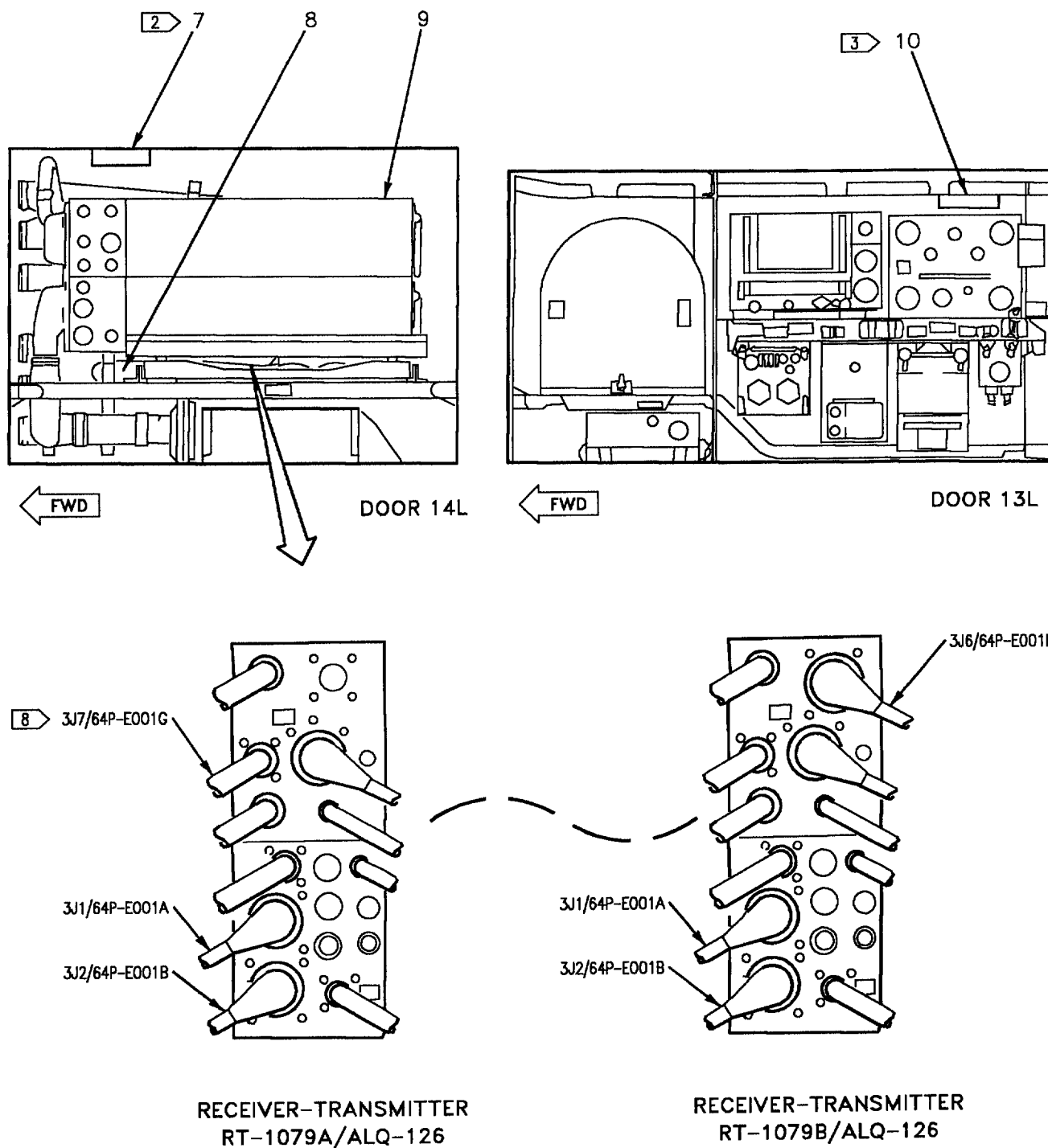


Figure 1. Countermeasures Set Locator (Sheet 4)

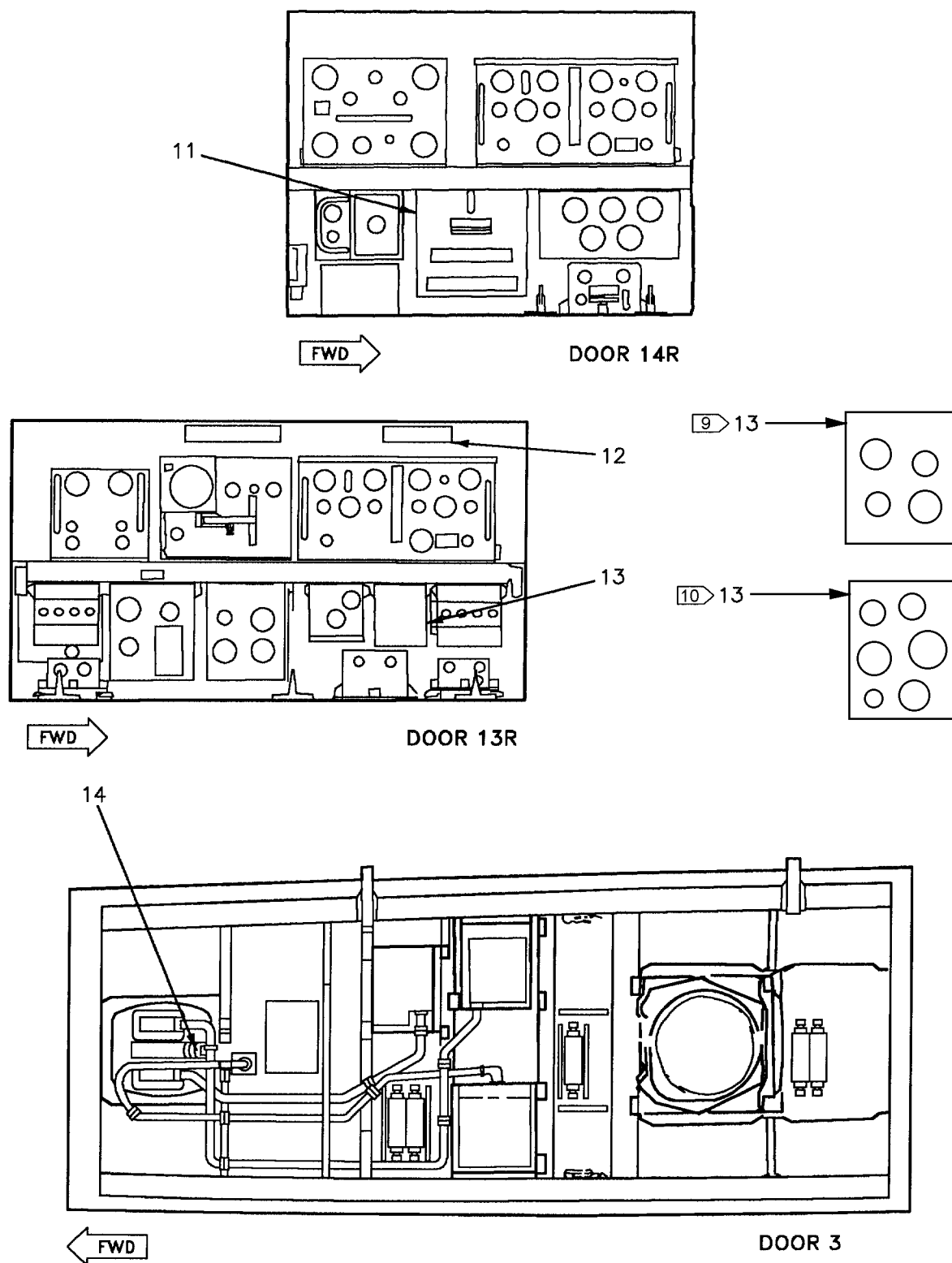
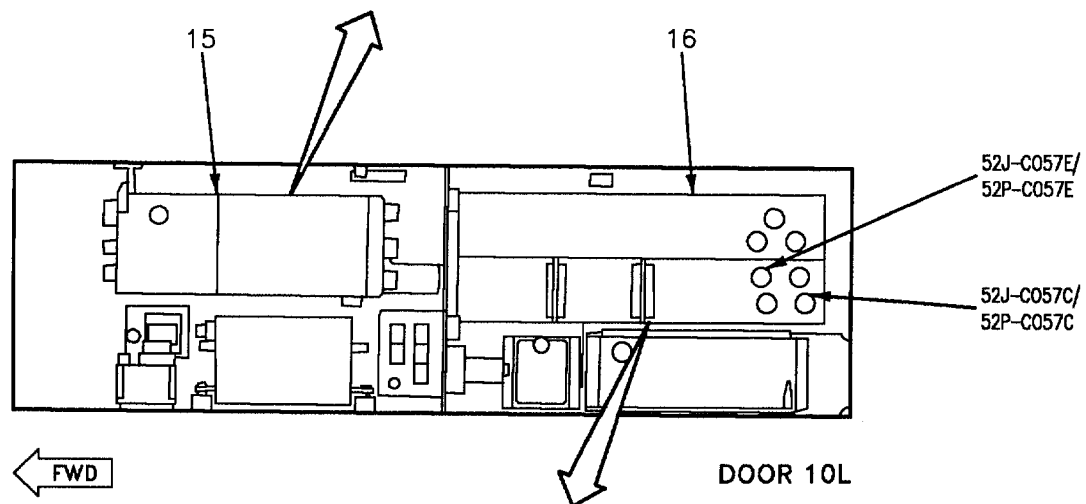


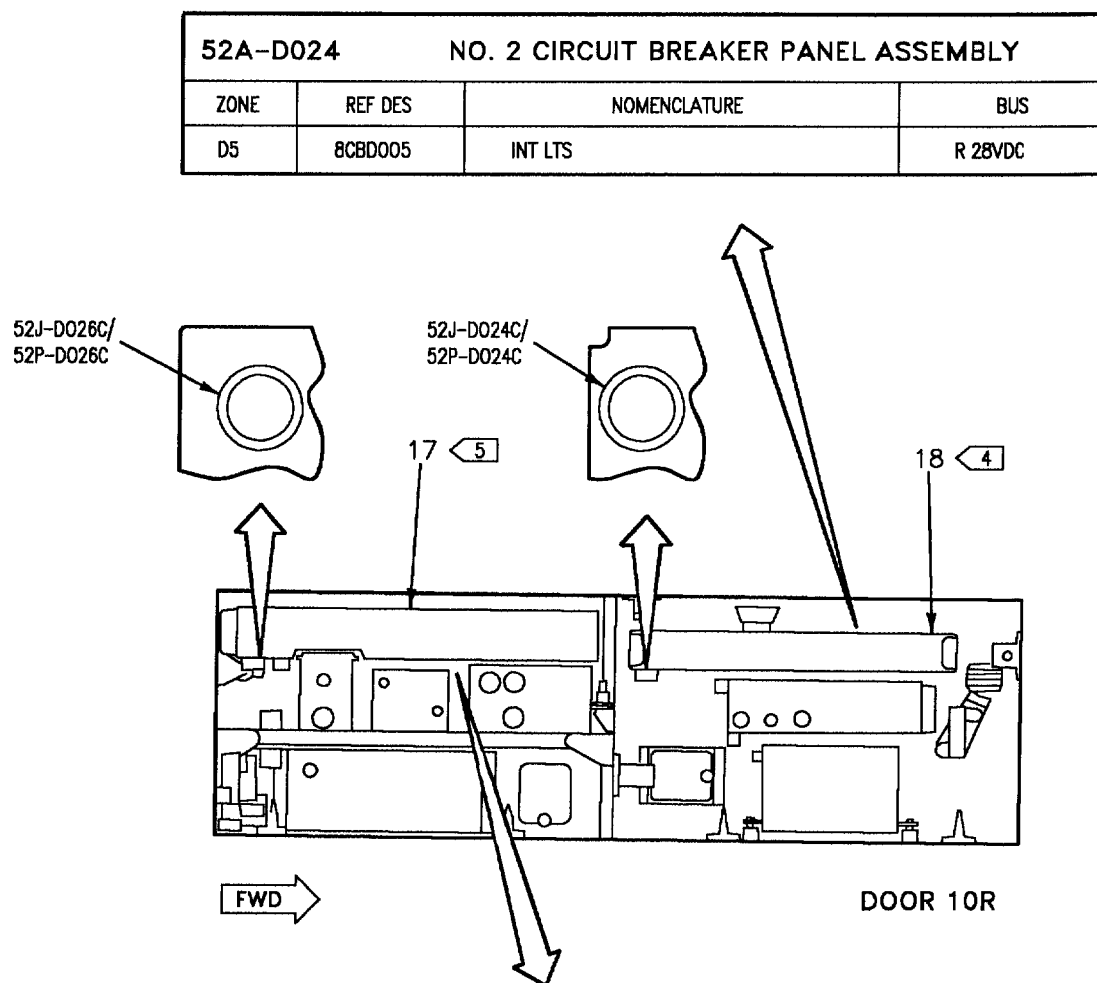
Figure 1. Countermeasures Set Locator (Sheet 5)

52A-C159 NO. 8 CIRCUIT BREAKER/RELAY PANEL ASSEMBLY			
ZONE	REF DES	NOMENCLATURE	BUS
B1	76CBC007	INTER COMM	ESS 24/28VDC



52A-C057 NO. 7 CIRCUIT BREAKER/RELAY PANEL ASSEMBLY			
ZONE	REF DES	NOMENCLATURE	BUS
A11	64CBC011	ALQ-126	L 115VAC ØA
B11	64CBC012	ALQ-126	L 115VAC ØB
C11	64CBC013	ALQ-126	L 115VAC ØC

Figure 1. Countermeasures Set Locator (Sheet 6)



52A-D026		NO. 4 CIRCUIT BREAKER PANEL ASSEMBLY	
ZONE	REF DES	NOMENCLATURE	BUS
C10	8CBD005	INT LTS	R 28VDC

Figure 1. Countermeasures Set Locator (Sheet 7)



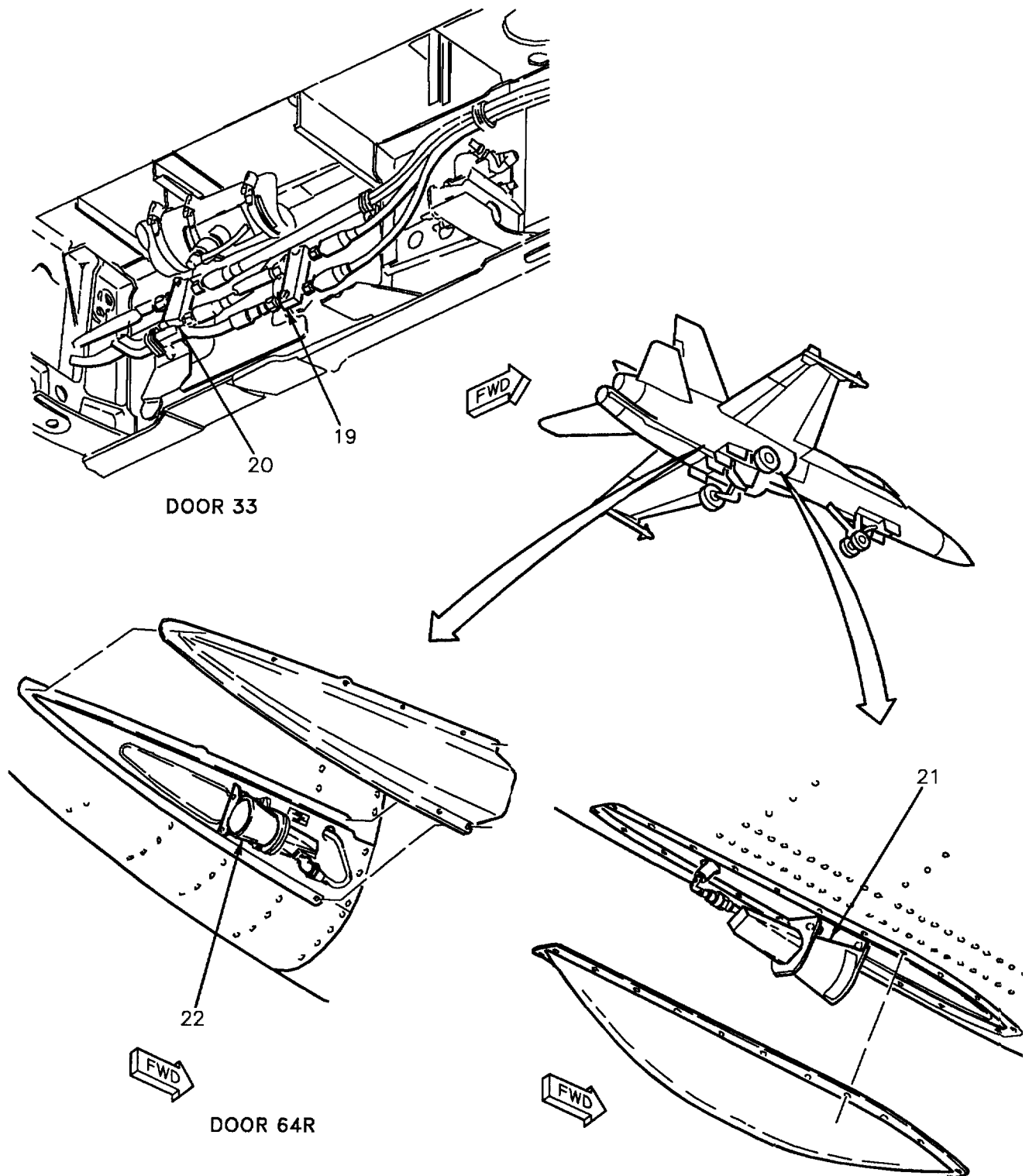


Figure 1. Countermeasures Set Locator (Sheet 8)

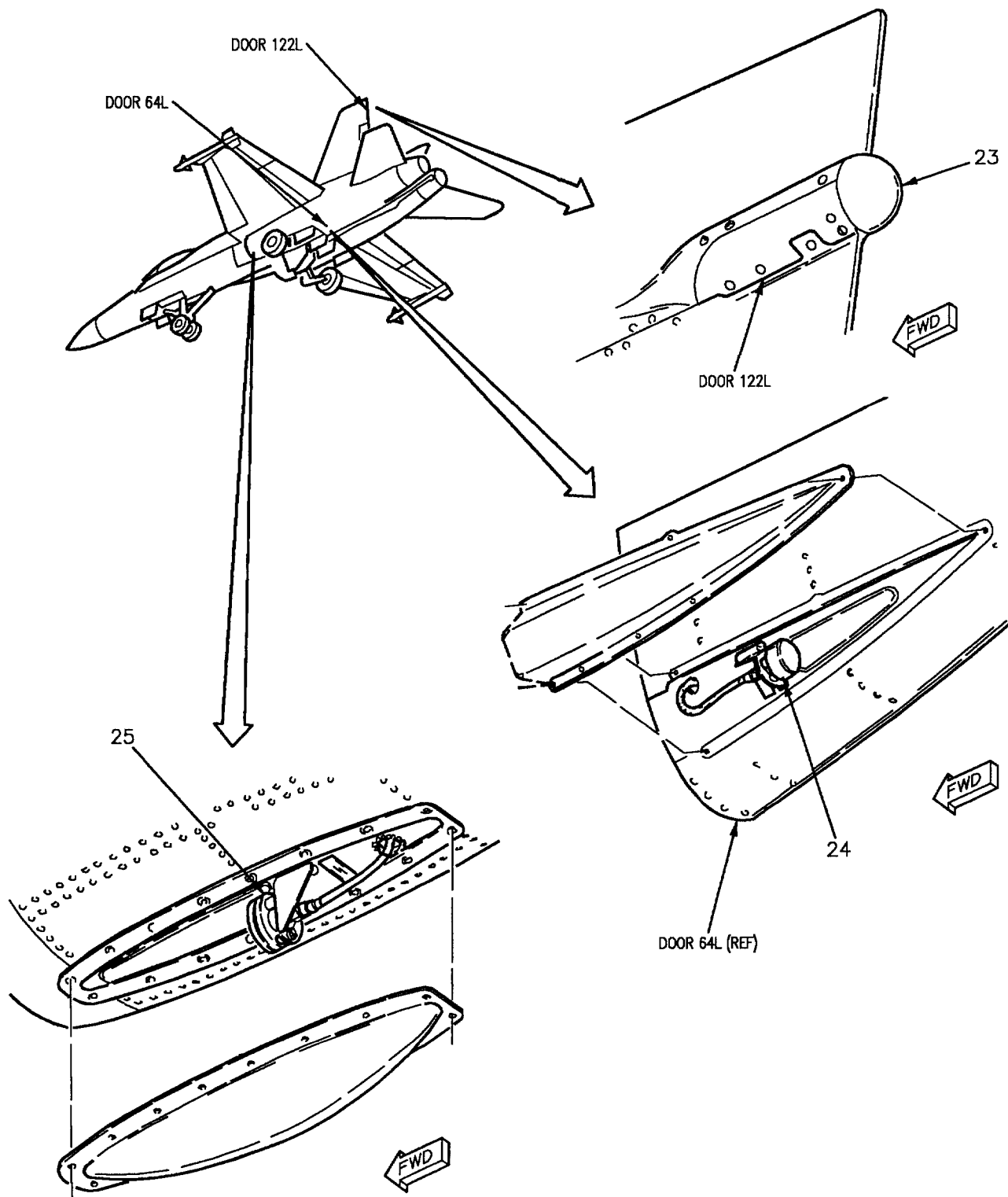


Figure 1. Countermeasures Set Locator (Sheet 9)







Nomenclature	Index No.	Ref Des
AFT HIGH BAND ANTENNA AS-3421/ALQ-126	23	64E-S018
AFT LOW BAND ANTENNA AS-3418/ALQ-126	24	64E-S006
AFT MID BAND ANTENNA AS-3419/ALQ-126	22	64E-T008
ARMAMENT COMPUTER CP-1342/AYQ-9(V)	11	61A-F001
ECM CONTROL PANEL ASSEMBLY	4	62A-H087
ECM COOLING AIR CONTROL VALVE	8	22L-E098
FORWARD HIGH BAND ANTENNA AS-3385/ALQ-126	14	64E-B017
FORWARD LOW BAND ANTENNA AS-3418/ALQ-126	25	64E-P005
FORWARD MID BAND ANTENNA AS-3420/ALQ-126	21	64E-R007
GND PWR CONTROL PANEL ASSEMBLY	3	1A-H004
HIGH BAND COUPLER CU-2243/A	12	64DCF004
 2 HIGH BAND SUPPRESSION FILTER F-1471/ALQ-126	7	64FLE010
 3 HIGH BAND SUPPRESSION FILTER F-1471/ALQ-126	10	64FLE010
INTERCOMMUNICATION AMPLIFIER-CONTROL	6	76A-H009
 9 INTERFERENCE BLANKER MX-9965/A	13	66A-F001
 10 INTERFERENCE BLANKER MX-11741/A	13	66A-F001
INTR LT CONTROL BOX PANEL ASSEMBLY	2	8A-J002
LH ADVISORY AND THREAT WARNING INDICATOR PANEL	1	52A-H073
LOW BAND COUPLER CU-2264/A	19	64DCE003
LOW BAND COUPLER CU-2264/A	20	64DCE002
 4 NO. 2 CIRCUIT BREAKER PANEL ASSEMBLY	18	52A-D024
 5 NO. 4 CIRCUIT BREAKER PANEL ASSEMBLY	17	62A-D026
NO. 7 CIRCUIT BREAKER RELAY PANEL ASSEMBLY	16	52A-C057

Figure 1. Countermeasures Set Locator (Sheet 10)

Nomenclature	Index No.	Ref Des
NO. 8 CIRCUIT BREAKER RELAY PANEL ASSEMBLY	15	62A-C159
RECEIVER-TRANSMITTER RT-1079( )/ALQ-126	9	64A-E001
VOLUME CONTROL PANEL ASSEMBLY	6	76A-K032

**LEGEND**

1. Aircraft connector locations are shown in A1-F18A( )-WDM-000.
- 2 F/A-18B.
  - 3 F/A-18A.
  - 4 161353 thru 161359.
  - 5 161360 and up.
  - 6 F/A-18B 161354 thru 161360.
  - 7 F/A-18B 161704 and up.
  - 8 161353 thru 161528; also 161702 thru 163175 before F/A-18 AFC 50.
  - 9 F/A-18A before F/A-18 AFC 253 or F/A-18 AFC 292 and F/A-18B.
  - 10 F/A-18A 162394 thru 163175 after F/A-18 AFC 253 or F/A-18 AFC 292.

**Figure 1. Countermeasures Set Locator (Sheet 11)**

---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TROUBLESHOOTING - BUILT-IN TEST PART 1**  
**COUNTERMEASURES SET**

---

**Reference Material**

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Line Maintenance Access Doors .....	A1-F18AC-LMM-010

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Table 1. STBY Light Did Not Come On With ECM Mode Switch In STBY .....	1
Table 2. STBY Light Remains On .....	4
Table 3. REC Light Does Not Come On During BIT .....	6


**Record of Applicable Technical Directives**

None

**Table 1. STBY Light Did Not Come On With ECM Mode Switch In STBY**

<b>Support Equipment Required</b>	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
Countermeasures Set Functional Schematic (A1-F18AC-760-500, WP008 00) may be used with this procedure.	
For locator, refer to WP015 00.	

**Table 1. STBY Light Did Not Come On With ECM Mode Switch In STBY (Continued)**

Malfunction is caused by one of the items below:		
Aircraft Wiring ECM Control Panel Assembly LH Advisory and Threat Warning Indicator Panel No. 7 Circuit Breaker/Relay Panel Assembly Receiver-Transmitter RT-1079( )/ALQ-126		
Procedure	No	Yes
<div style="text-align: center;">  <p>CAUTION</p> </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
a. On INTR LT control box panel assembly (cockpit, right console), set and hold LT TEST switch to TEST. Does STBY light come on? .....	b	d
b. On LH advisory and threat warning indicator panel, did any lights come on? .....	f	c
c. Do the substeps below:		
(1) On LH advisory and threat warning indicator panel, replace lamps in STBY cap assembly (A1-F18AC-440-300, WP021 00).		
(2) On INTR LT control box panel assembly, set and hold LT TEST switch to TEST. If STBY light does not come on, replace LH advisory and threat warning indicator panel (A1-F18AC-440-300, WP021 00) .....	-	-
d. On ECM control panel assembly, set ECM mode switch to BIT. Does STBY light come on and go off in approximately 4 minutes? .....	g	e
e. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step q. ....	-	-
f. Do Cockpit Warning/Caution/Advisory Lighting System Test (A1-F18AC-440-200, WP006 00) .....	-	-
g. Do the substeps below:		
(1) On ECM control panel assembly, set ECM mode switch to OFF.		
(2) Remove electrical power (A1-F18AC-LMM-000).		

**Table 1. STBY Light Did Not Come On With ECM Mode Switch In STBY (Continued)**

Procedure	No	Yes
(3) Remove LH advisory and threat warning indicator panel (A1-F18AC-440-300, WP021 00).		
(4) Does continuity exist from P1 pin 21 to pin 20? .....	h	i
h. Replace LH advisory and threat warning indicator panel (A1-F18AC-440-300, WP021 00). Do step q. ....	-	-
i. Do the substeps below:		
(1) Open door 14L (A1-F18AC-LMM-010).		
(2) Disconnect 64P-E001B from Receiver-Transmitter RT-1079( )/ALQ-126.		
(3) Does continuity exist from 64P-E001B pin S to 52J-H073 pin 21? .....	j	k
j. Isolate defective aircraft wiring (A1-F18AC( )-WDM-000). Do step q. ....	-	-
k. With ECM mode switch, on the ECM control panel assembly set to STBY, does continuity exist from 64P-E001B pin P to pin N? .....	m	l
l. Replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00). Do step q. ....	-	-
m. Do the substeps below:		
(1) Open door 10L (A1-F18AC-LMM-010).		
(2) Disconnect 52P-C057E from no. 7 circuit breaker/relay panel assembly. Does continuity exist from 52P-C057E pin 6 to 64P-E001B pin P? .....	o	n
n. Isolate between no. 7 circuit breaker/relay panel assembly wiring and relay 1K-C102 (A1-F18AC-420-300, WP032 00). Do step q. ....	-	-
o. Do the substeps below:		
(1) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(2) Does continuity exist from 52P-H087 pin 31 to 52P-C057E pin 6? .....	j	p
p. Does continuity exist from 52P-H087 pin 43 to 64P-E001B pin P? .....	j	e
q. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 52P-C057E		
(2) 64P-E001B		
(3) LH advisory and threat warning indicator panel		
(4) ECM control panel assembly		
(5) Door 10L		
(6) Door 14L .....	-	-

Table 2. STBY Light Remains On

Support Equipment Required		
NOTE		
Alternate item type designations or part numbers are listed in parentheses.		
Part Number or Type Designation	Nomenclature	
260-6XLP (AN/USM-311)	Multimeter	
Materials Required		
None		
NOTE		
Countermeasures Set Functional Schematic (A1-F18AC-760-500, WP008 00) may be used with this procedure.		
For component locator, refer to WP015 00.		
Malfunction is caused by one of the items below:		
Aircraft Wiring No. 7 Circuit Breaker/Relay Panel Assembly Receiver-Transmitter RT-1079( )/ALQ-126		
Procedure	No	Yes
<div>CAUTION</div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p>NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>Pin to pin test per procedural step.</li><li>Shorts to ground.</li><li>Shorts between surrounding pins on connectors.</li><li>Shorts between shield and conductors.</li><li>Shield continuity.</li></ol> <p>a. Do the substeps below:</p> <p>(1) On ECM control panel assembly, set ECM mode switch to OFF.</p>		



Table 2. STBY Light Remains On (Continued)

Procedure	No	Yes
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) Open door 14L (A1-F18AC-LMM-010).		
(4) Inspect the three fuses on the Receiver-Transmitter RT-1079( )/ALQ-126. Are any fuses defective? .....	c	b
b. Do the substeps below:		
(1) Replace defective fuse (A1-F18AC-760-300, WP010 00).		
(2) Apply electrical power (A1-F18AC-LMM-000).		
(3) On GND PWR control panel assembly, set 3 switch to A ON and hold for 3 seconds.		
(4) On ECM control panel assembly, set ECM mode switch to STBY. If STBY light does not go off in approximately 4 minutes, replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00). Do step n. ....	-	-
c. Do the substeps below:		
(1) Disconnect 64P-E001A from Receiver-Transmitter RT-1079( )/ALQ-126.		
(2) Apply electrical power (A1-F18AC-LMM-000).		
(3) Does 115vac exist from 64P-E001A pin F to pin E (ground)? .....	g	d
d. Does 115vac exist from 64P-E001A pin A to pin E (ground)? .....	h	e
e. Does 115vac exist from 64P-E001A pin D to pin E (ground)? .....	i	f
f. Replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00). Do step n. ....	-	-
g. Do the substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		
(2) Open door 10L (A1-F18AC-LMM-010).		
(3) Disconnect 52P-C057C from no. 7 circuit breaker/relay panel assembly.		
(4) Does continuity exist from 52P-C057C pin w to 64P-E001A pin F? .....	m	j
h. Do the substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		
(2) Open door 10L (A1-F18AC-LMM-010).		
(3) Disconnect 52P-C057C from no. 7 circuit breaker/relay panel assembly.		
(4) Does continuity exist from 52P-C057C pin v to 64P-E001A pin A? .....	m	k

**Table 2. STBY Light Remains On (Continued)**

Procedure	No	Yes
i. Do the substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		
(2) Open door 10L (A1-F18AC-LMM-010).		
(3) Disconnect 62P-C057C from no. 7 circuit breaker/relay panel assembly.		
(4) Does continuity exist from 62P-C057C pin x to 64P-E001A pin D? .....	m	l
j. Isolate between no. 7 circuit breaker/relay panel assembly wiring and 64CBC011 (A1-F18AC-420-300, WP027 00). Do step n. ....	-	-
k. Isolate between no. 7 circuit breaker/relay panel assembly wiring and 64CBC012 (A1-F18AC-420-300, WP027 00). Do step n. ....	-	-
l. Isolate between no. 7 circuit breaker/relay panel assembly wiring and 64CBC013 (A1-F18AC-420-300, WP027 00). Do step n. ....	-	-
m. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step n. ....	-	-
n. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 64P-E001A		
(2) 52P-C057C		
(3) Door 10L		
(4) Door 14L .....	-	-

**Table 3. REC Light Does Not Come On During BIT**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	

**Table 3. REC Light Does Not Come On During BIT (Continued)**

NOTE		
Countermeasures Set Functional Schematic (A1-F18AC-760-500, WP008 00) may be used with this procedure.		
For locator, refer to WP015 00.		
Malfunction is caused by one of the items below:		
Aircraft Wiring ECM Control Panel Assembly LH Advisory and Threat Warning Indicator Panel Receiver-Transmitter RT-1079( )/ALQ-126		
Procedure	No	Yes
<div style="text-align: center;"><b>CAUTION</b></div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
a. Did the RPT, GO, or NO GO light come on during BIT? .....	d	b
b. On INTR LT control box panel assembly (cockpit, right console), set and hold LT TEST switch to TEST. Does REC light come on? .....	c	j
c. Do the substeps below:		
(1) On LH advisory and threat warning indicator panel, replace lamps in REC cap assembly (A1-F18AC-440-300, WP021 00).		
(2) On INTR LT control box panel assembly, set and hold LT TEST switch to TEST. If REC light does not come on, replace LH advisory and threat warning indicator panel (A1-F18AC-440-300, WP021 00) .....	-	-
d. Do the substeps below:		
(1) On ECM control panel assembly, set ECM mode switch to OFF.		
(2) Remove aircraft electrical power (A1-F18AC-LMM-000).		

**Table 3. REC Light Does Not Come On During BIT (Continued)**

Procedure	No	Yes
(3) Open door 14L (A1-F18AC-LMM-010).		
(4) Disconnect 64P-E001B from Receiver-Transmitter RT-1079( )/ALQ-126.		
(5) On ECM control panel assembly, set ECM mode switch to BIT. Does continuity exist from 64P-E001B pin U to pin E? .....	e	i
e. Do the substeps below:		
(1) Remove ECM control panel assembly (A1-F18AC-760-300, WP007 00).		
(2) Does continuity exist from 52P-H087 pin 34 to 64P-E001B pin U? .....	g	f
f. Does continuity exist from 52P-H087 pin 19 to 64P-E001B pin E? .....	g	h
g. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step m. ....	-	-
h. Replace ECM control panel assembly (A1-F18AC-760-300, WP007 00). Do step m. ....	-	-
i. Replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00). Do step m. ....	-	-
j. Do the substeps below:		
(1) On ECM control panel assembly, set ECM mode switch to OFF.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) Remove LH advisory and threat warning indicator panel (A1-F18AC-440-300, WP021 00).		
(4) Open door 14L (A1-F18AC-LMM-010).		
(5) Disconnect 64P-E001B from Receiver-Transmitter RT-1079( )/ALQ-126.		
(6) Does continuity exist from 64P-E001B pin J to 52J-H073 pin 37? .....	g	k
k. Does continuity exist from P1 pin 37 to pin 20? .....	l	i
l. Replace LH advisory and threat warning panel (A1-F18AC-440-300, WP021 00). Do step m. ....	-	-
m. If disconnected, removed, or opened during this procedure, make sure the items listed are connected, installed, or closed:		
(1) 64P-E001B		
(2) ECM control panel assembly		
(3) LH advisory and threat warning indicator panel		
(4) Door 14L .....	-	-

---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TROUBLESHOOTING - BUILT-IN TEST PART 2**  
**COUNTERMEASURES SET**

---

**Reference Material**

Line Maintenance Procedures ..... A1-F18AC-LMM-000  
Line Maintenance Access Doors ..... A1-F18AC-LMM-010

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Table 1. RPT Light Does Not Come On During BIT .....	1
Table 2. Neither GO Nor NO GO Lights Come On .....	3
Table 3. No Audio In Headset .....	5
Table 4. Audio Not Variable In Rear Cockpit .....	7

**Record of Applicable Technical Directives**

None

**Table 1. RPT Light Does Not Come On During BIT**

<b>Support Equipment Required</b>	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
Countermeasures Set Functional Schematic (A1-F18AC-760-500, WP008 00) may be used with this procedure.	
For locator, refer to WP015 00.	

Table 1. RPT Light Does Not Come On During BIT (Continued)

Malfunction is caused by one of the items below:  Aircraft Wiring LH Advisory and Threat Warning Indicator Panel Receiver-Transmitter RT-1079( )/ALQ-126		
Procedure	No	Yes
<div>CAUTION</div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>Pin to pin test per procedural step.</li><li>Shorts to ground.</li><li>Shorts between surrounding pins on connectors.</li><li>Shorts between shield and conductors.</li><li>Shield continuity.</li></ol>		
a. On INTR LT control box panel assembly (cockpit, right console), set and hold LT TEST switch to TEST. Does RPT light come on? .....	b	c
b. Do the substeps below:  (1) On LH advisory and threat warning indicator panel, replace lamps in RPT cap assembly (A1-F18AC-440-300, WP021 00).  (2) On INTR LT control box panel assembly, set and hold LT TEST switch to TEST. If RPT light does not come on, replace LH advisory and threat warning indicator panel (A1-F18AC-440-300, WP021 00) .....	-	-
c. Do the substeps below:  (1) On ECM control panel assembly, set ECM mode switch to OFF.  (2) Remove electrical power (A1-F18AC-LMM-000).  (3) Remove LH advisory and threat warning indicator panel (A1-F18AC-440-300, WP021 00).  (4) Does continuity exist from P1 pin 44 to pin 20? .....	d	e
d. Replace LH advisory and threat warning indicator panel (A1-F18AC-440-300, WP021 00) .....	-	-


**Table 1. RPT Light Does Not Come On During BIT (Continued)**

Procedure	No	Yes
e. Do the substeps below:		
(1) Open door 14L (A1-F18AC-LMM-010).		
(2) Disconnect 64P-E001B from Receiver-Transmitter RT-1079( )/ALQ-126.		
(3) Does continuity exist from 64P-E001B pin F to 52J-H073 pin 44? .....	f	g
f. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step h. ....	-	-
g. Replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00). Do step h. ....	-	-
h. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 64P-E001B		
(2) LH advisory and threat warning indicator panel		
(3) Door 14L .....	-	-

**Table 2. Neither GO Nor NO GO Lights Come On**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
Materials Required	
None	
<b>NOTE</b>	
Countermeasures Set Functional Schematic (A1-F18AC-760-500, WP008 00) may be used with this procedure.	
For locator, refer to WP015 00.	
Malfunction is caused by one of the items below:	
Aircraft Wiring	
LH Advisory and Threat Warning Indicator Panel	
Receiver-Transmitter RT-1079( )/ALQ-126	

Table 2. Neither GO Nor NO GO Lights Come On (Continued)

Procedure	No	Yes
<div style="text-align: center;">  <p>CAUTION</p> </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
a. On INTR LT control box panel assembly (cockpit, right console), set and hold LT TEST switch to TEST. Do both GO and NO GO lights come on? .....	b	c
b. Do the substeps below:		
(1) On LH advisory and threat warning indicator panel, replace lamps in cap assembly of the light that did not come on (A1-F18AC-440-300, WP021 00).		
(2) On INTR LT control box panel assembly, set and hold LT TEST. If the light does not come on, replace LH advisory and threat warning indicator panel (A1-F18AC-440-300, WP021 00) .....	-	-
c. Do the substeps below:		
(1) On ECM control panel assembly, set ECM mode select switch to OFF.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) Remove LH advisory and threat warning indicator panel (A1-F18AC-440-300, WP021 00).		
(4) Does continuity exist from:		
P1 pin 12 to pin 20		
P1 pin 43 to pin 20? .....	d	e
d. Replace LH advisory and threat warning indicator panel (A1-F18AC-440-300, WP021 00) .....	-	-
e. Do the substeps below:		
(1) Open door 14L (A1-F18AC-LMM-010).		
(2) Disconnect 64P-E001B from Receiver-Transmitter RT-1079( )/ALQ-126.		




**Table 2. Neither GO Nor NO GO Lights Come On (Continued)**

Procedure	No	Yes
(3) Does continuity exist from: 64P-E001B pin M to 52J-H073 pin 12 64P-E001B pin T to 52J-H073 pin 43? .....	f	g
f. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step h. ....	-	-
g. Replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00). Do step h. ....	-	-
h. If disconnected, removed, or opened during this procedure, make sure all items listed are connected, installed, or closed:  (1) 64P-E001B  (2) LH advisory and threat warning indicator panel  (3) Door 14L .....	-	-

**Table 3. No Audio In Headset**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
Countermeasures Set Functional Schematic (A1-F18AC-760-500, WP008 00) may be used with this procedure.	
For locator, refer to WP015 00.	
Malfunction is caused by one of the items below:	
Aircraft Wiring	
Intercommunication Amplifier-Control	
Receiver-Transmitter RT-1079( )/ALQ-126	

**Table 3. No Audio In Headset (Continued)**

Procedure	No	Yes
<div style="text-align: center;">  <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol> </div>		
a. Do the substeps below:		
(1) On ECM control panel assembly, set ECM mode switch to OFF.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) Remove intercommunication amplifier-control (A1-F18AC-600-300, WP012 00).		
(4) Disconnect 76P-H009B.		
(5) Open door 14L (A1-F18AC-LMM-010).		
(6) Disconnect 64P-E001G from Receiver-Transmitter RT-1079( )/ALQ-126.		
(7) Does continuity exist from 64P-E001G pin F to 76P-H009B pin 119? .....	c	b
b. Does continuity exist from 64P-E001G pin C to 76P-H009B pin 111? .....	c	d
c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step e. ....	-	-
d. Malfunction has been isolated to intercommunication amplifier-control (A1-F18AC-600-300, WP012 00), or Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00). Do step e. ....	-	-
e. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 64P-E001G		
(2) Door 14L		
(3) Intercommunication amplifier-control .....	-	-

**Table 4. Audio Not Variable In Rear Cockpit**

Support Equipment Required		
<b>NOTE</b>		
Alternate item type designations or part numbers are listed in parentheses.		
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>	
260-6XLP (AN/USM-311)	Multimeter	
<b>Materials Required</b>		
None		
<b>NOTE</b>		
Countermeasures Set Functional Schematic (A1-F18AC-760-500, WP008 00) may be used with this procedure.		
For locator, refer to WP015 00.		
Malfunction is caused by one of the items below:		
Aircraft Wiring Intercommunication Amplifier-Control Volume Control Panel Assembly		
Procedure	No	Yes
<div>CAUTION</div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>Pin to pin test per procedural step.</li><li>Shorts to ground.</li><li>Shorts between surrounding pins on connectors.</li><li>Shorts between shield and conductors.</li><li>Shield continuity.</li></ol> <p>a. Do the substeps below:</p> <p>(1) On ECM control panel assembly, set ECM mode switch to OFF.</p>		

**Table 4. Audio Not Variable In Rear Cockpit (Continued)**

Procedure	No	Yes
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) Remove intercommunication amplifier-control (A1-F18AC-600-300, WP012 00).		
(4) On volume control panel assembly, set ECM VOL control to HI. Does continuity exist from 76P-H009B pin 60 to pin 61? .....	h	b
b. Observe multimeter, and rotate ECM VOL control counterclockwise to the LOW position. Does continuity exist from HI to LOW? .....	g	c
c. Does continuity exist from 76P-H009B pin 61 to pin 59? .....	e	d
d. Replace intercommunication amplifier-control (A1-F18AC-600-300, WP012 00). Do step j. ....	-	-
e. Do the substeps below:		
(1) Remove volume control panel assembly (A1-F18AC-600-300, WP014 00).		
(2) Does continuity exist from 76P-K032 pin 26 to 76P-H009B pin 59? .....	f	g
f. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step j. ....	-	-
g. Replace volume control panel assembly (A1-F18AC-600-300, WP014 00). Do step j. ....	-	-
h. Do the substeps below:		
(1) Remove volume control panel assembly (A1-F18AC-600-300, WP014 00).		
(2) Does continuity exist from 76P-K032 pin 25 to 76P-H009B pin 60? .....	f	i
i. Does continuity exist from 76P-K032 pin 34 to 76P-H009B pin 61? .....	f	g
j. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) Volume control panel assembly		
(2) Intercommunication amplifier-control .....	-	-

---

ORGANIZATIONAL MAINTENANCE  
TESTING AND TROUBLESHOOTING  
TESTING - WAVEGUIDE PRESSURIZATION TEST  
COUNTERMEASURES SET

---

**Reference Material**

None

**Alphabetical Index**

Subject	Page No.
Table 1. Countermeasures Set AN/ALQ-126 Antenna Waveguide Pressurization Test . . . . .	1
Pressurization Test Equipment Hookup, Figure 1 . . . . .	4

**Record of Applicable Technical Directives**

None

**Table 1. Countermeasures Set AN/ALQ-126 Antenna Waveguide Pressurization Test**

Procedure	Normal Indication	Remedy for Abnormal Indication
<b>System Required Components</b>		
Aft High Band Antenna AS-3421/ALQ-126		
Forward High Band Antenna AS-3385/ALQ-126		
High Band Coupler CU-2243/A		
High Band Waveguides		
<b>Support Equipment Required</b>		
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>	
60A80D1	Portable Air Cylinder	
68D240021-1001	Avionics Equipment Pressurization Test Adapter	
<b>Materials Required</b>		
None		

**Table 1. Countermeasures Set AN/ALQ-126 Antenna Waveguide Pressurization Test (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<div style="border: 2px solid black; padding: 5px; text-align: center; margin: 10px auto; width: fit-content;"> <b>WARNING</b> </div> <p>To avoid personal injury, pressure must be relieved before connecting or disconnecting any connections.</p> <p>Damage to waveguide may result if 20 psig is exceeded when pressurizing waveguide.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>For locator, refer to figure 1.</p>		
<p>1. PRELIMINARY.</p> <p>a. On portable air cylinder, rotate the pressure regulator and control valves fully counterclockwise.</p> <p>b. Rotate bleed valve fully clockwise.</p> <p>c. On pressurization test adapter, set SHUTOFF VALVE to CLOSED, and rotate PRESS VALVE fully counterclockwise.</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p>If adapter hose has an ST7M332-1 charging adapter installed, charging adapter must be removed before connecting to waveguide pressurization port.</p> <p>d. Connect pressurization test adapter between aircraft and portable air cylinder. Refer to figure 1.</p> <p>2. PROCEDURE.</p> <p>a. On portable air cylinder, open control valve and adjust pressure regulator for delivery pressure gage indication of 200 psig.</p> <p>b. On pressurization test adapter, do the substeps below:</p> <p>(1) On A1 INPUT, hold valve and loosen swivel hex nut two turns counterclockwise.</p>		

**Table 1. Countermeasures Set AN/ALQ-126 Antenna Waveguide Pressurization Test (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>(2) Rotate SHUTOFF VALVE to OPEN.</p> <p>c. Adjust PRESS VALVE for 19 psig indication on PRESS GAGE.</p> <p>d. Set SHUTOFF VALVE to CLOSED and observe PRESS GAGE.</p> <p>3. FINAL.</p> <p>a. On portable air cylinder, do the substeps below:</p> <p>(1) Close control valve (clockwise).</p> <p>(2) Rotate bleed valve counterclockwise.</p> <p>(3) Rotate pressure fully counterclockwise.</p> <p>b. Disconnect adapter hose from waveguide pressure test port, and allow pressure to bleed off. Replace dust cap and tighten.</p> <p>c. Disconnect portable air cylinder servicing hose from A1 INPUT of pressurization test adapter. Hold valve and tighten swivel hex nut of A1 INPUT, then replace dust cap.</p> <p>d. On portable air cylinder, stow servicing hose.</p> <p>e. Disconnect adapter hose from A2 OUTPUT of pressurization test adapter. Replace dust cap on A2 OUTPUT and stow hose.</p> <p>f. Close and secure pressurization test adapter.</p>	<p>1. On 161353 THRU 161736, pressure loss in 5 minutes is not more than 1.5 psig.</p> <p>2. On 161737 AND UP, pressure loss is not more than 4 psig per 1 minute in a 5 minute period.</p>	<p>Do table 1 (WP019 00).</p> <p>Do table 1 (WP019 00).</p>

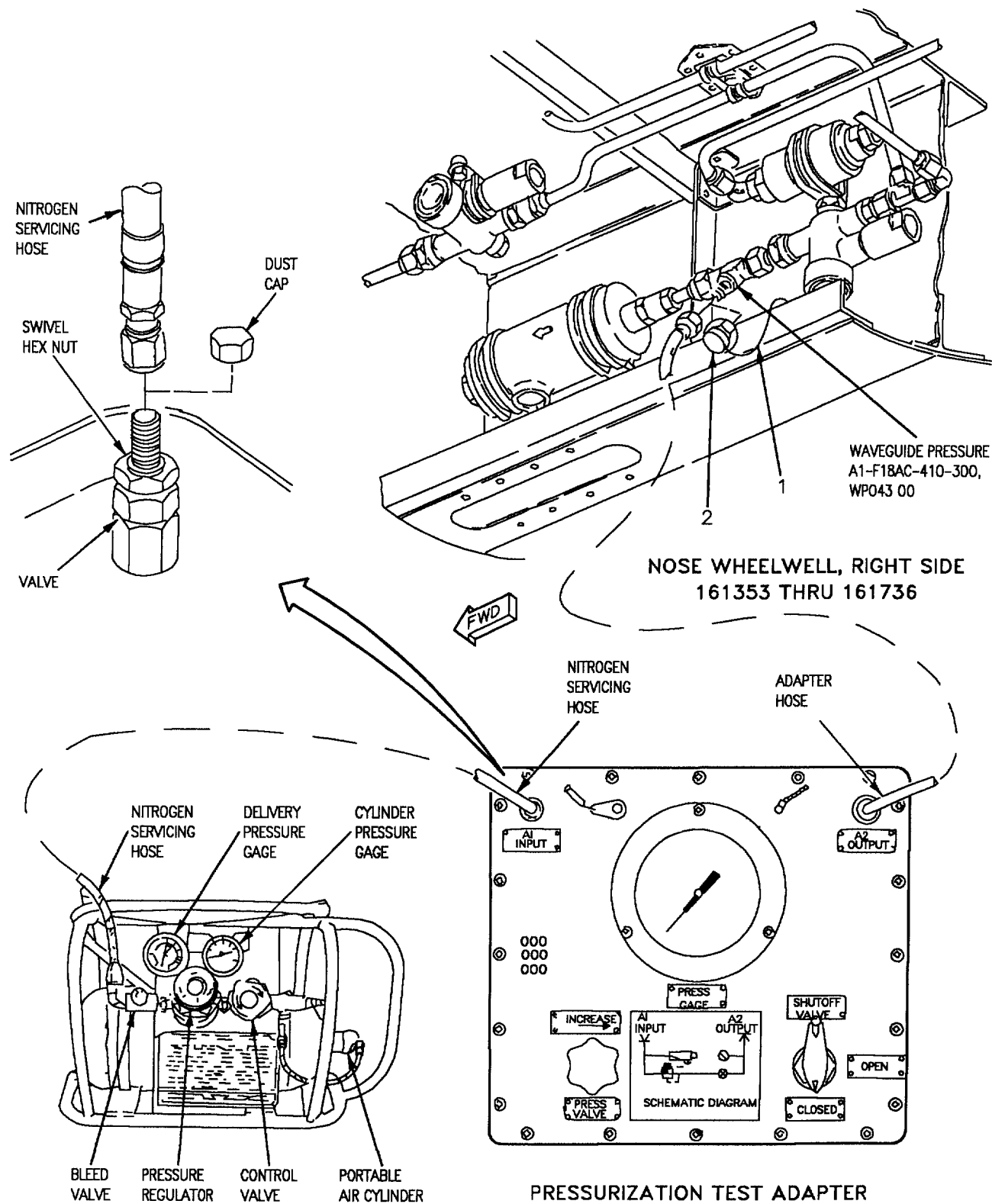


Figure 1. Pressurization Test Equipment Hookup (Sheet 1)



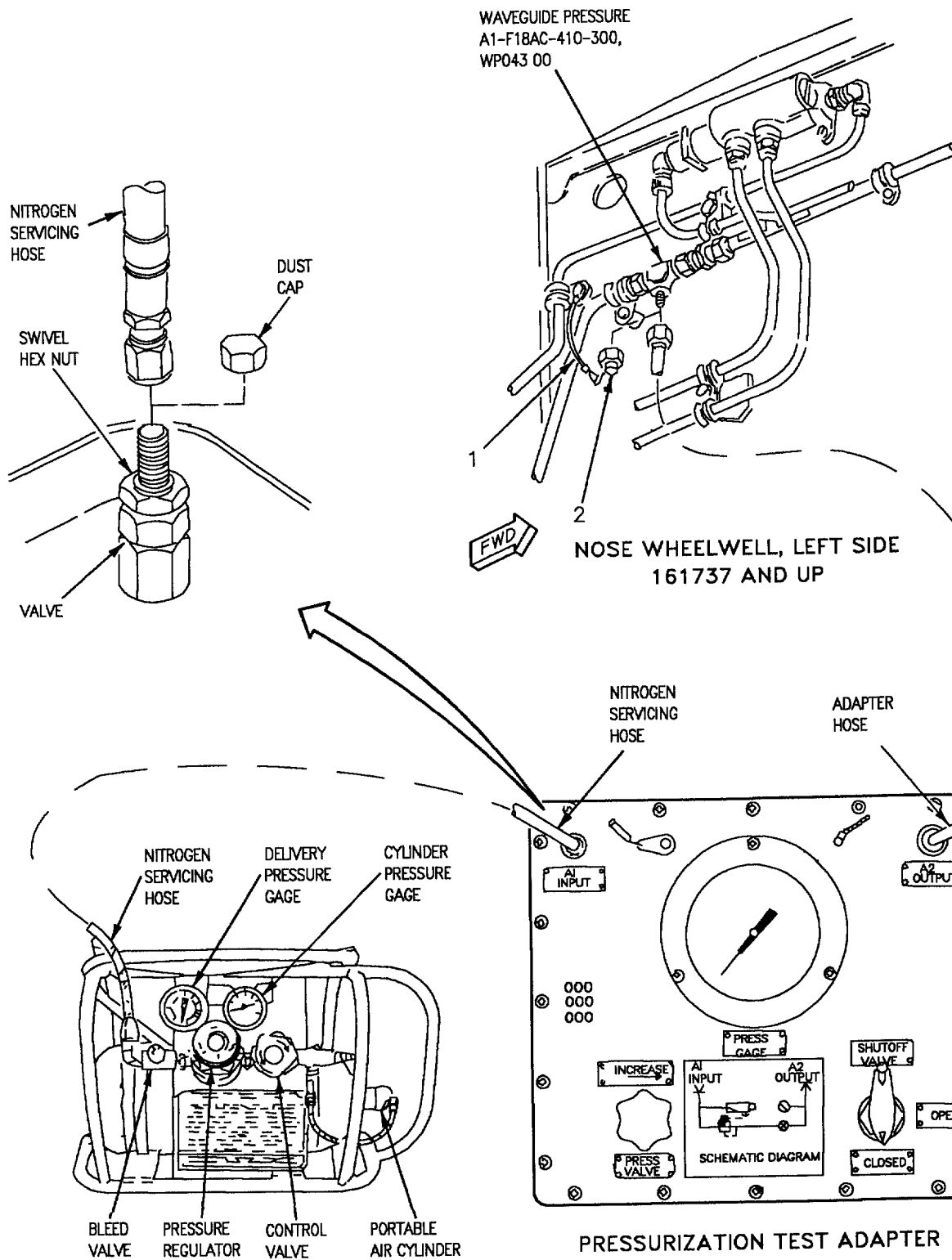


Figure 1. Pressurization Test Equipment Hookup (Sheet 2)



---

ORGANIZATIONAL MAINTENANCE  
TESTING AND TROUBLESHOOTING  
TROUBLESHOOTING - WAVEGUIDE PRESSURIZATION TEST  
COUNTERMEASURES SET

---

**Reference Material**

None

**Alphabetical Index**

Subject	Page No.
Antenna Waveguide Segment Locator, Figure 2 .....	7
Pressurization Troubleshooting Test Equipment Hookup, Figure 1 .....	4
Table 1. Waveguide Pressurization Leak Test Fault Isolation .....	1

**Record of Applicable Technical Directives**

None



**Table 1. Waveguide Pressurization Leak Test Fault Isolation**

Procedure	Normal Indication	Remedy for Abnormal Indication
System Required Components		
Aft Adapter Aft High Band Antenna AS-3421/ALQ-126 High Band Coupler CU-2243/A High Band Waveguides		

Table 1. Waveguide Pressurization Leak Test Fault Isolation (Continued)

Procedure	Normal Indication	Remedy for Abnormal Indication
Support Equipment Required		
Part Number or Type Designation	Nomenclature	
68D240021-1001	Avionics Equipment Pressurization Test Adapter	
4918A	Ultrasonic-Leak Detector	
1317AS100-1	Nitrogen Servicing Unit	
Materials Required		
None		
<div>WARNING</div>		
To avoid personal injury, relieve pressure before connecting or disconnecting connections.		
Damage may result to waveguide if 20 psig is exceeded during pressurization.		
NOTE		
For Nitrogen Servicing Unit hookup, refer to figure 1.		
a. To pressurize AN/ALQ-126 Antenna Waveguide, do the substeps below:  (1) On portable air cylinder, close the control valve CW and rotate bleed valve CW.  (2) Disconnect portable air cylinder servicing hose from A1 INPUT of Avionics Equipment Pressurization Test Adapter (pressurization test adapter).  (3) Connect nitrogen servicing unit servicing hose to A1 INPUT of pressurization test adapter.  (4) On pressurization test adapter, turn SHUTOFF VALVE to CLOSED.		

**Table 1. Waveguide Pressurization Leak Test Fault Isolation (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>(5) On nitrogen servicing unit, adjust output for 200 PSIG.</p> <p>(6) On pressurization test adapter, adjust PRESS VALVE so PRESS GAGE indicates 20 PSIG.</p>		
<div style="text-align: center;">  <p>Damage may result to waveguide if 20 psig is exceeded during pressurization.</p> </div>		
<p>(7) Slowly turn SHUTOFF VALVE to OPEN.</p> <p>b. Using ultrasonic-leak detector and fig 2, troubleshoot the AN/ALQ-126 Antenna Waveguide.</p>	Leak not detected.	Refer to fig 2 for waveguide segment replacement.
<div style="text-align: center;">  <p>To avoid personal injury, relieve pressure before disconnecting nitrogen servicing unit.</p> </div>		
<p>c. To disconnect nitrogen servicing unit, do the substeps below:</p> <p>(1) Relieve pressure on nitrogen servicing unit and disconnect nitrogen servicing hose from A1 INPUT of pressurization test adapter.</p> <p>(2) Disconnect adapter hose from waveguide pressure test port and A2 OUTPUT of pressurization test adapter.</p> <p>(3) Install cap (2) on waveguide pressure test port.</p>		

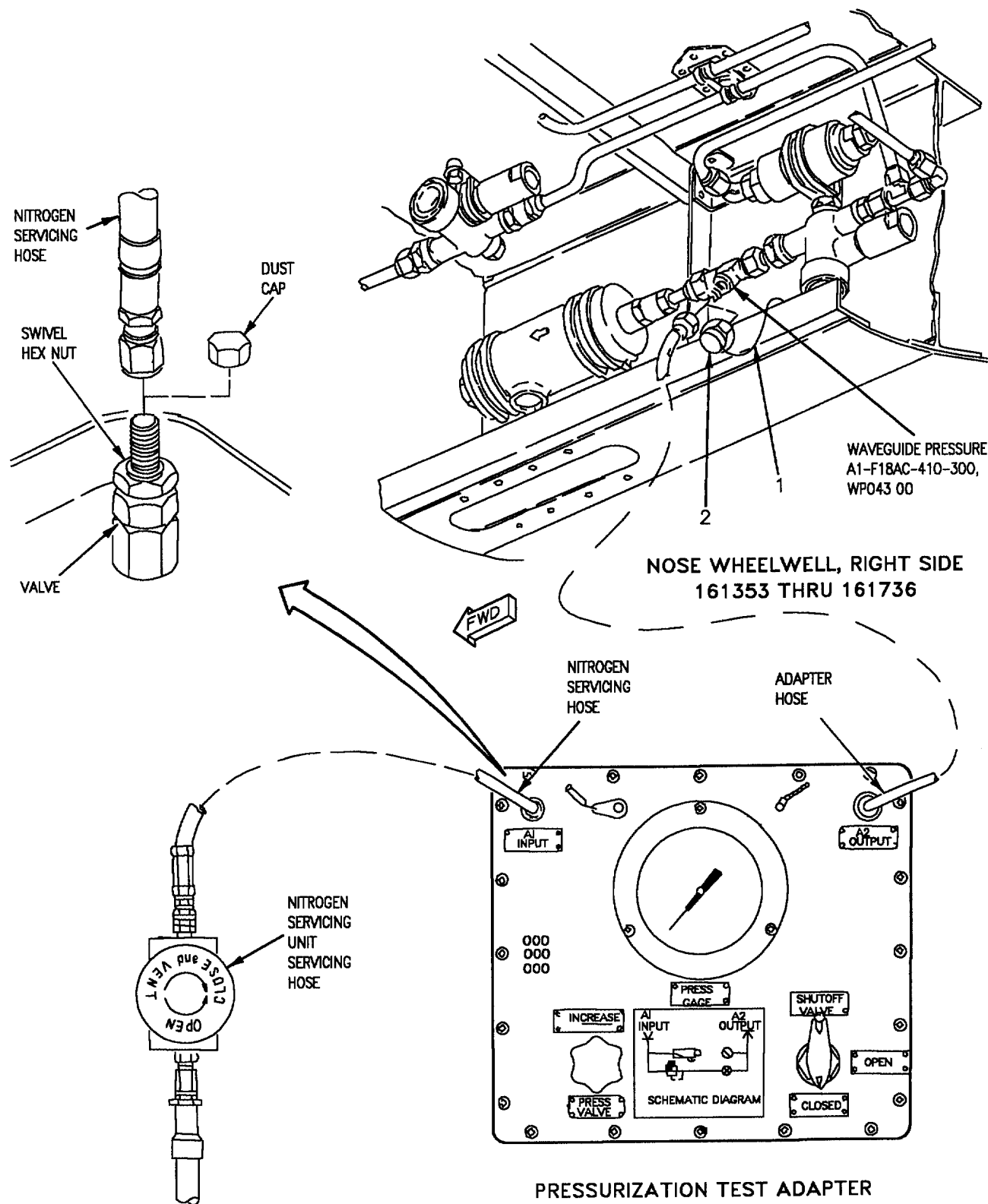


Figure 1. Pressurization Troubleshooting Test Equipment Hookup (Sheet 1)

01900101

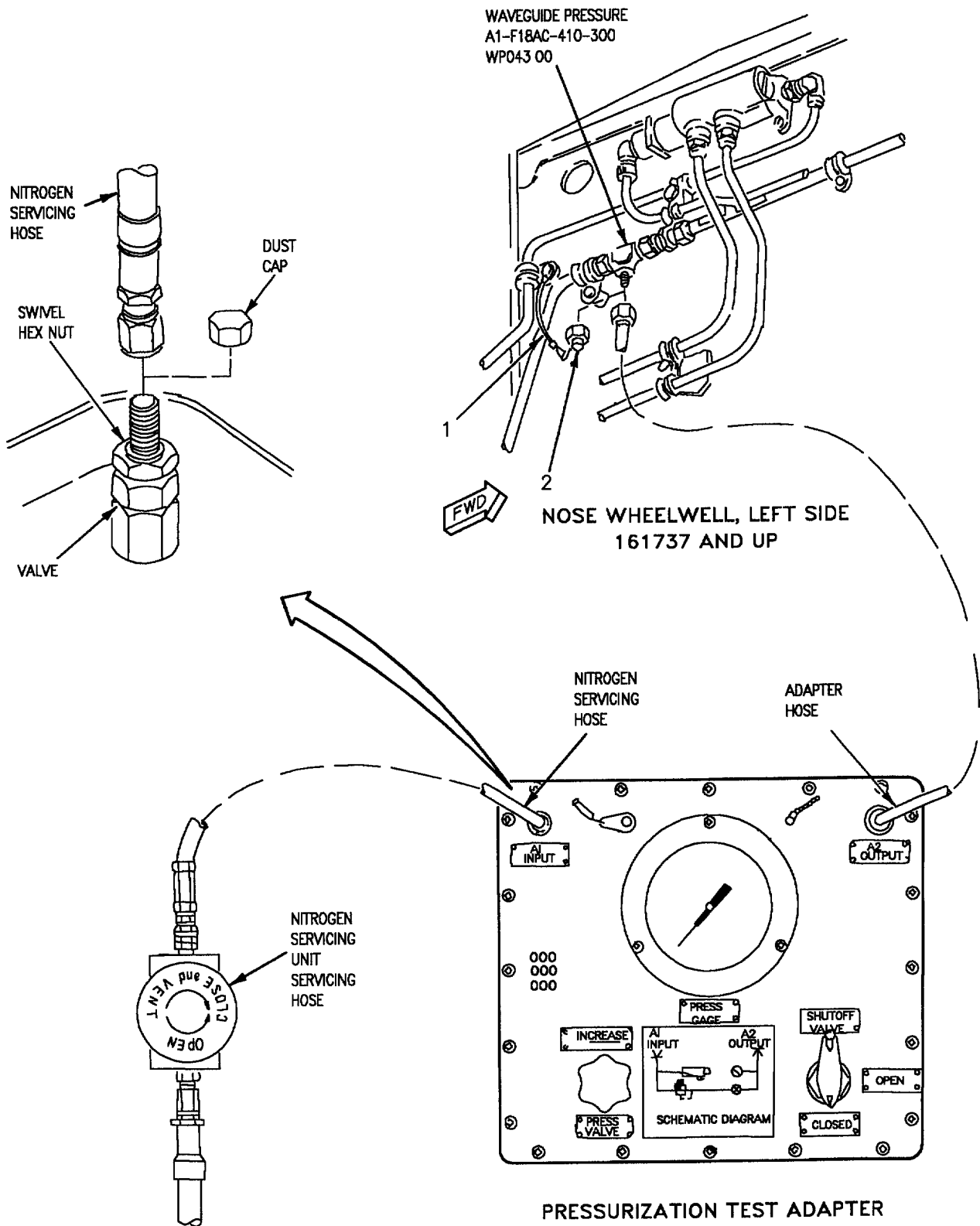
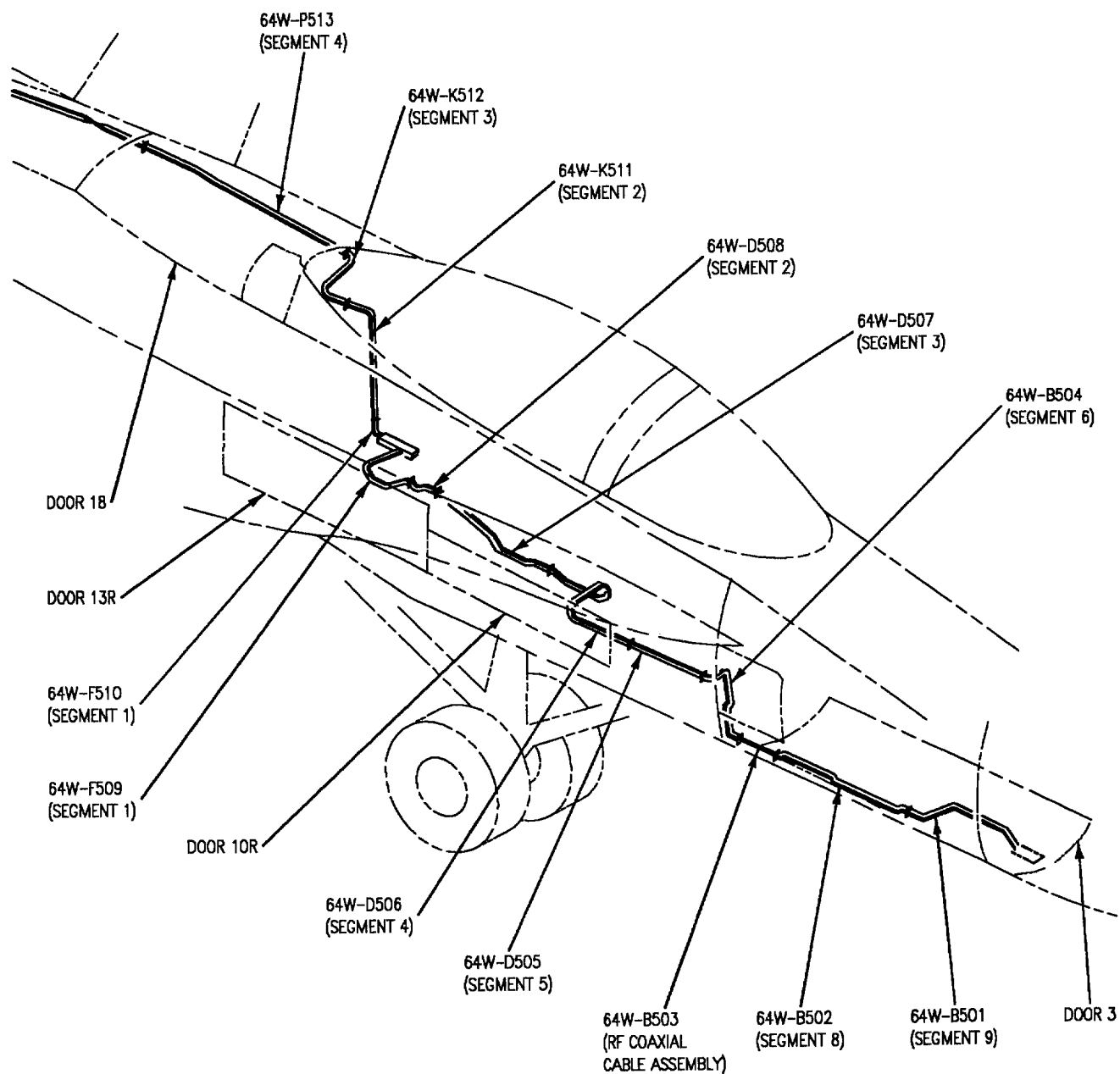


Figure 1. Pressurization Troubleshooting Test Equipment Hookup (Sheet 2)

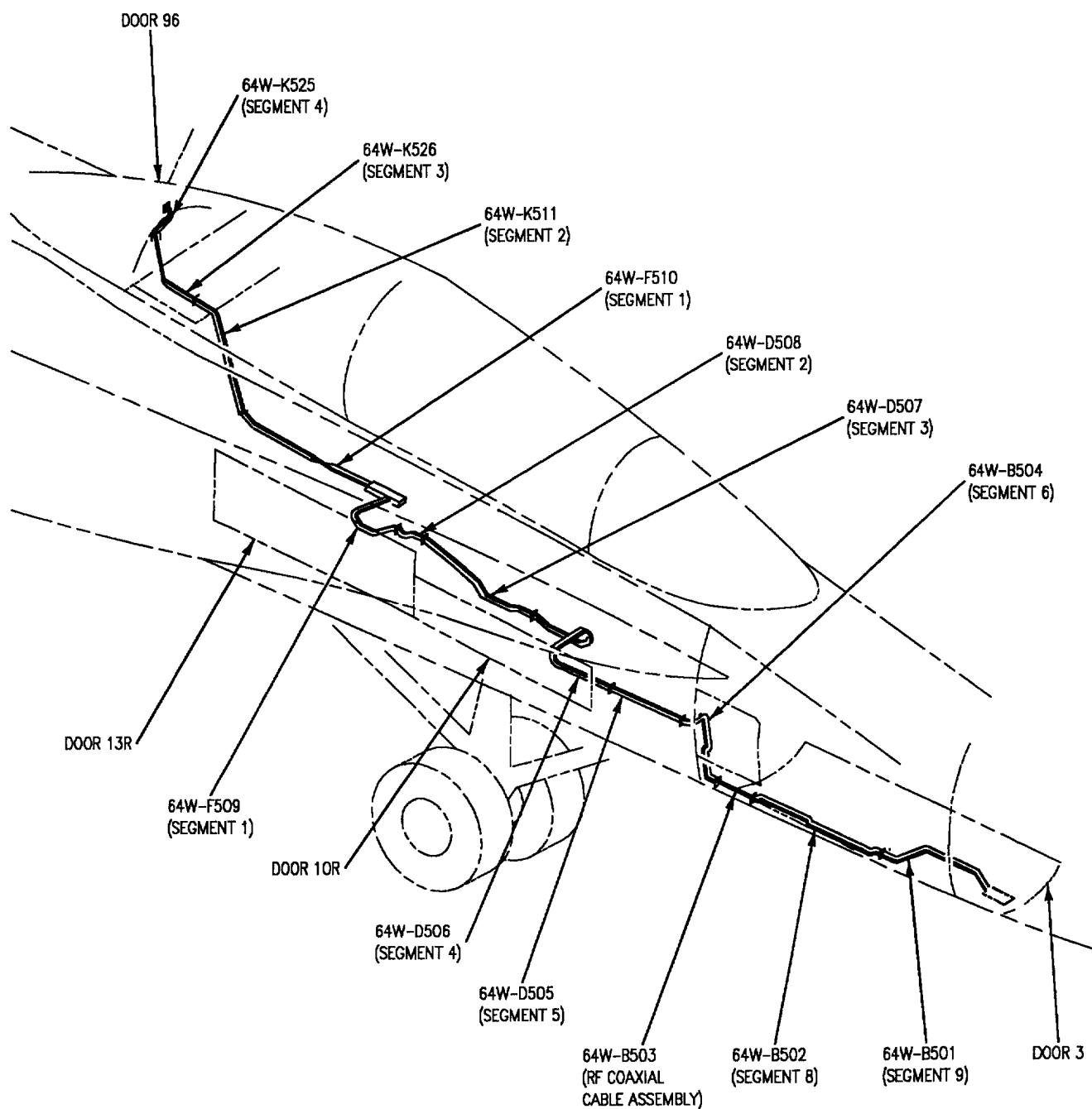






F/A-18A

Figure 2. Antenna Waveguide Segment Locator (Sheet 1)



F/A-18B

Figure 2. Antenna Waveguide Segment Locator (Sheet 2)

01900202

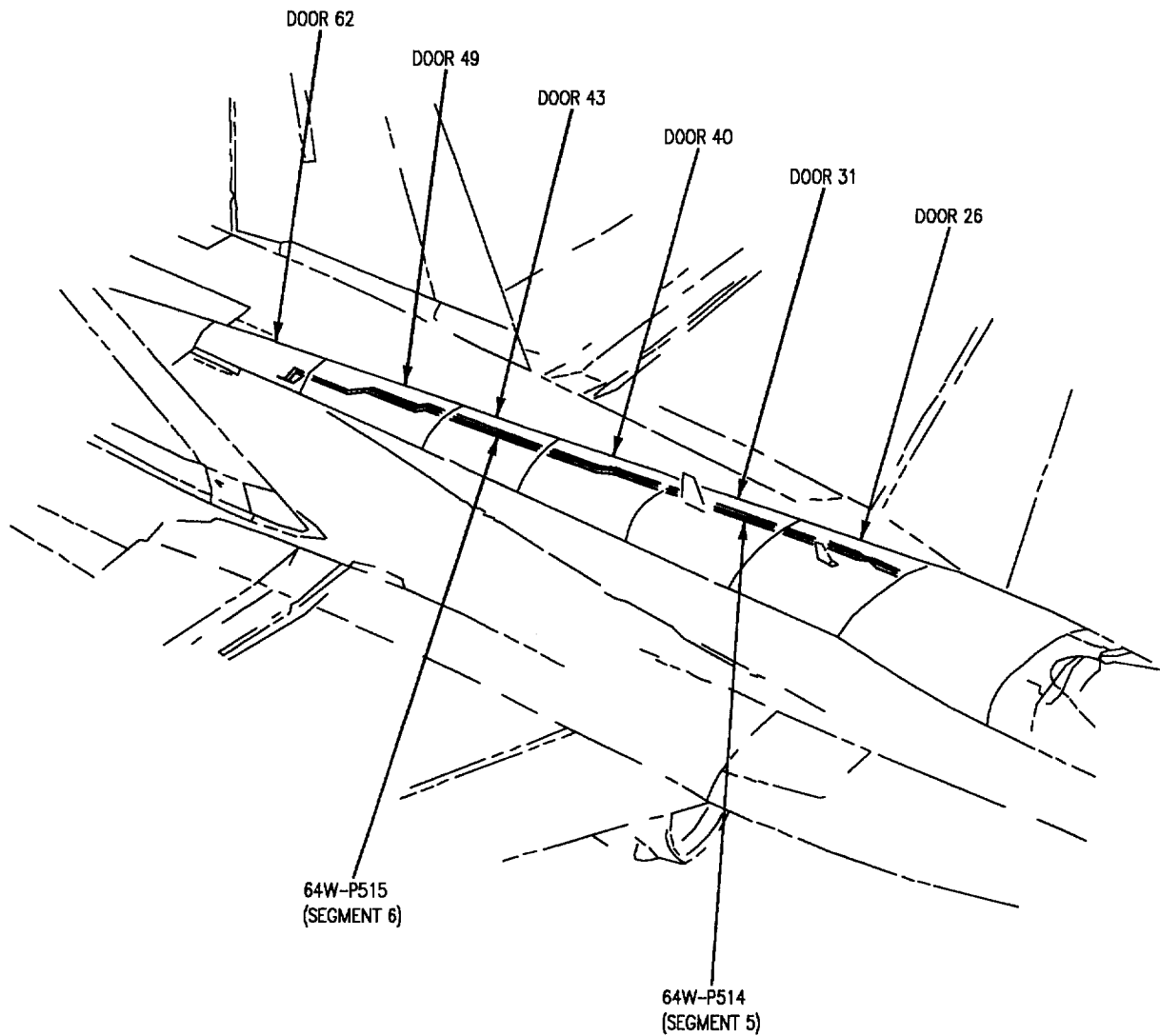


Figure 2. Antenna Waveguide Segment Locator (Sheet 3)

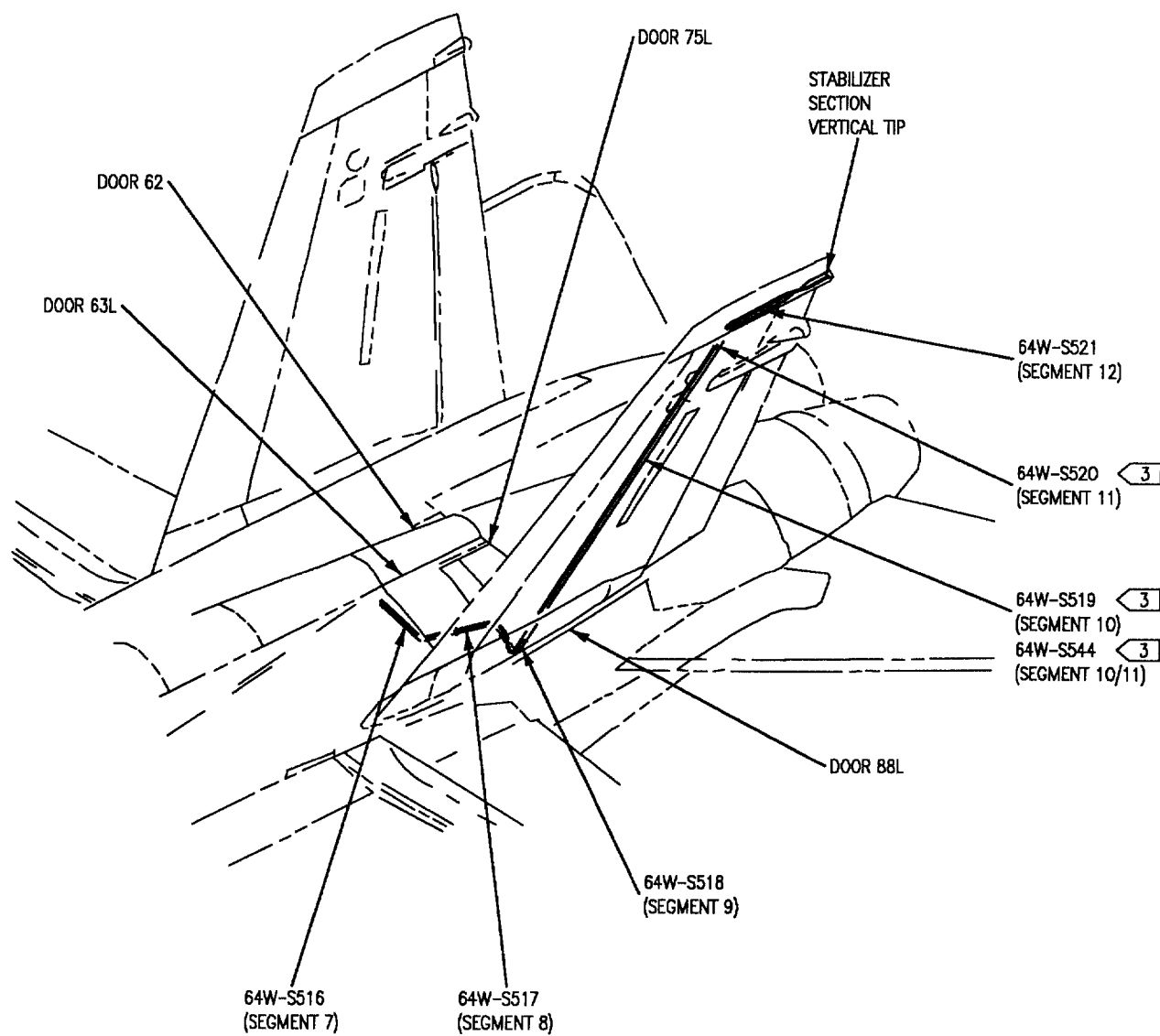


Figure 2. Antenna Waveguide Segment Locator (Sheet 4)

FORWARD AN/ALQ-126 ANTENNA WAVEGUIDE			
ACCESS	REF DES	SEGMENT NUMBER	REPLACEMENT WP (A1-F18AC-760-300)
DOOR 3	64W-B501	9	WP033 00
	64W-B502	8	WP033 00
	64W-B503	7	WP032 00
	64W-B504	6	WP031 00
DOOR 3 DOOR 10R	64W-D505	5	WP031 00
DOOR 10R	64W-D506	4	WP030 00
	64W-D507	3	WP030 00
DOOR 10 DOOR 13R	64W-D508	2	WP029 00
DOOR 13R	64W-D509	1	WP029 00












AFT AN/ALQ-126 ANTENNA WAVEGUIDE			
ACCESS	REF DES	SEGMENT NUMBER	REPLACEMENT WP (A1-F18AC-760-300)
DOOR 13R	64W-F510  1	1	WP021 00
	64W-F510  2	1	WP023 00
DOOR 13R COCKPIT	64W-K511  1	2	WP022 00
	64W-K511  2	2	WP023 00
COCKPIT	64W-K512  1	3	WP022 00
	64W-K526  2	3	WP024 00
COCKPIT DOOR 18	64W-P513  1	4	WP025 00
	64W-K525  2	4	WP024 00
DOOR 26 DOOR 31 DOOR 40 DOOR 43	64W-P514	5	WP026 00

Figure 2. Antenna Waveguide Segment Locator (Sheet 5)

AFT AN/ALQ-126 ANTENNA WAVEGUIDE			
ACCESS	REF DES	SEGMENT NUMBER	REPLACEMENT WP (A1-F18AC-760-300)
DOOR 43 DOOR 49 DOOR 62	64W-P515	6	WP026 00
DOOR 62 DOOR 63L	64W-S516	7	WP027 00
DOOR 63L DOOR 75L	64W-S517	8	WP027 00
DOOR 75L DOOR 88L	64W-S518	9	WP027 00
DOOR 88L STABILIZER SECTION- VERTICAL TIP	64W-S519  64W-S544 	10 10/11	WP028 00 WP028 00
DOOT 122 STABILIZER SECTION- VERTICAL TIP	64W-S520  64W-S521	11 12	WP028 00 WP028 00

## LEGEND


 F/A-18A. F/A-18B. Aft AN/ALQ-126 Antenna Waveguide Segment 64W-S544  
(Segment 10/11) is an alternate installation.

Figure 2. Antenna Waveguide Segment Locator (Sheet 6)

## ORGANIZATIONAL MAINTENANCE

## TESTING AND TROUBLESHOOTING

## TESTING - LINE/ANTENNA RETURN LOSS AND INSERTION LOSS

## TACTICAL ELECTRONIC WARFARE

This WP is incomplete without WP020 00 contained in Confidential Supplement A1-F18AC-760-210/(C).

## Reference Material

Tactical Electronic Warfare Systems ..... A1-F18AC-760-210/(C)  
 Line/Antenna Return Loss and Insertion Loss ..... WP020 00

## Alphabetical Index

Subject	Page No.
Fault Location Setup, Figure 3 .....	23
Initial/Insertion Loss Setup, Figure 1 .....	20
Introduction .....	1
Return Loss Setup, Figure 2 .....	22
Table 1. Initial Setup .....	2
Table 2. Insertion Loss Setup .....	5
Table 3. Return Loss Setup .....	8
Table 4. Recorder Setup .....	10
Table 5. Recorder Reference Line Recording .....	13
Table 6. Measurement Recording .....	16
Table 7. Fault Location .....	16
Table 8. Shutdown .....	18

## Record of Applicable Technical Directives

None

## 1. INTRODUCTION.

- mid band (WP022 00)

2. This work package contains common procedures for use of the Swept Frequency Measurement Test Set AN/USM-402(V)1. The information is used during return loss and insertion loss testing of the countermeasures set antenna system and the countermeasures warning and control system rf transmission lines and antenna system.

- high band (WP023 00)

3. Countermeasures set antenna system testing is divided by band (low, mid and high). Unique return loss and insertion loss testing procedures are as listed below:

- low band (WP021 00)

4. When doing countermeasures set antenna system return loss and insertion loss checks requested by scheduled maintenance, WP021 00, WP022 00 and WP023 00 must be accomplished. When using return loss and insertion loss checks for unscheduled maintenance of a particular band, do only the applicable WP.

5. Unique countermeasures warning and control system return loss and insertion loss checks are in WP039 00.

Table 1. Initial Setup

Support Equipment Required	
Part Number or Type Designation	Nomenclature
AN/USM-402A(V)1	Swept Frequency Measurement Test Set
Materials Required	
None	
1. Procedure.	
a. Setup the Swept Frequency Measurement Test Set AN/USM-402(V)1 (USM-402) by doing substeps below:	
(1) Position USM-402 next to aircraft to allow best access to items to be tested.	
NOTE	
Do not ground USM-402 to aircraft.	
(2) Connect USM-402 ground cable between unpainted surface of USM-402 and good ground source.	
(3) Attach Radio Frequency Recorder RO-469-(P)/USM-402(V) (recorder) to top of USM-402 using attaching straps.	
(4) Obtain hookup cable W3. Connect W3P2 to 1J2 of USM-402 and W3P1 to 2J1 of recorder.	
(5) On control panel, make sure POWER switch is set to OFF.	
NOTE	
USM-402 operates on 105 to 125vac, 50 to 400 Hz power.	
Do not use aircraft 400 Hz utility power as power source for USM-402.	
(6) Connect USM-402 power cable W1 between 1J1 and 105 to 125vac, 50 to 60 Hz power source. If 105 to 125vac, 400 Hz power source is more accessible, use adapter W2 (part of test set) to connect power cable W1 to 400 Hz power source.	
(7) On control panel, set POWER switch to ON.	
(8) On oscilloscope, set LINE switch to ON.	
(9) On sweep oscillator, press POWER pushbutton.	



Table 1. Initial Setup (Continued)

**CAUTION**

To prevent possible detector damage, touch a ground point before handling detectors to avoid static discharge from the hands through the detector.

Do not connect detectors directly to the high frequency output of the sweep oscillator unless internal leveling (LEVELING INT) is selected on the oscillator unit. The high frequency RF output may be strong enough to damage the detectors in the unlevelled mode.

- b. Connect USM-402 directional couplers, and detectors to swept amplitude analyzer and oscillator using USM-402 rf cables. Use the applicable rf cables necessary to reach unit under test. Refer to fig 1.
- c. On the sweep oscillator, set the below controls:

**NOTE**

Off is with black ring visible.

SWEEP TIME (SEC)	0.001
VARIABLE	Midrange
TRIGGER INT	On (pressed)
MANUAL SWEEP	Full CCW and pushed
RF MARKER	Off
RF AM	Off
RF BLANKING	Off
MARKER AMPL	OFF (full CCW)
Sweep Mode	Select full band by pressing center of control marked FULL BAND.
M1	Not used
$\Delta F$	Not used
F <sub>o</sub> FINE	Not used
M2	Not used

- d. On the oscillator unit, set the below controls:

LEVELING	INT
PM (RF OFF)	On (pressed)

**NOTE**

Countermeasures set antenna system sweep frequencies are listed in Countermeasures Set Sweep Frequencies, table 1 (A1-F18AC-760-210/(C), WP020 00).

Countermeasures warning and control system sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00).

**Table 1. Initial Setup (Continued)**

- e. On the controller, set the below controls:

**NOTE**

Select the narrowest spectrum that includes selected range and sweep frequencies.

FREQ RANGE GHz	Select range and frequency scale of interest.
LEVEL CONTROL	Maximum leveled power (turn LEVEL CONTROL maximum CW until UNLEVELED WHEN LIT lamp comes on, then CCW until lamp goes out).

- f. On the swept amplitude analyzer, set the below controls:

SMOOTHING	Off (out)
-----------	-----------

CHANNEL A

DISPLAY POSITION	Press
OFFSET dB	+00.0
OFFSET CAL	ON
dB/DIV	10

**NOTE**

CHANNEL B DISPLAY is turned off by slightly pressing one of the CHANNEL B DISPLAY pushbuttons already in the out (off) position. This action releases all pushbuttons from their detent position.

CHANNEL B

DISPLAY	Off
OFFSET dB	+00.0
OFFSET CAL	ON
dB/DIV	10

- g. On the oscilloscope, set the below controls:

DISPLAY	EXT SENS
INTENSITY	Adjust for visible trace.
FOCUS	Adjust for sharp trace (use FIND BEAM and HORIZONTAL POSITION as necessary).
SCALE	Set so that grid lines (CRT graticules) are visible.
AC/DC	DC
MAGNIFIER	X5
HORIZONTAL POSITION	Position left edge of trace on left vertical graticule.
DISPLAY	Adjust external sensitivity so that trace fills full width of horizontal scale.

- h. On swept amplitude analyzer, use CHANNEL A DISPLAY POSITION screwdriver adjustment to set channel A sweep position horizontal graticule from the top of the oscilloscope. (Another graticule may be selected at the option of the operator.) This is the position graticule.

**Table 1. Initial Setup (Continued)****NOTE**

Channel A display is turned off by slightly pressing one of the CHANNEL A DISPLAY pushbuttons. This releases all pushbuttons from their detent position.

- i. On the swept amplitude analyzer, turn off channel A display and press CHANNEL B DISPLAY POSITION pushbutton.

**NOTE**

Adjustment of oscilloscope controls is not necessary to obtain a channel B trace. If adjustment becomes necessary, this is an indication of a malfunction in the swept amplitude analyzer.

- j. On swept amplitude analyzer, use screwdriver adjustment to set channel B sweep position to the same horizontal graticule used in step h.

**Table 2. Insertion Loss Setup****Support Equipment Required****Part Number or  
Type Designation**

AN/USM-402A(V)1

**Nomenclature**

Swept Frequency  
Measurement Test Set

**Materials Required**

None

## 1. Procedure.

- a. Use fig 1 to select USM-402 components for insertion loss setup.



When connecting 7mm adapters to directional couplers, do not tighten both connectors at the same time. Tightening both connectors at the same time may cause an over-tight condition, damaging connector threads.

**NOTE**

It may not be possible to use the same adapters for the reference line as will be used when connecting to the unit under test. For example, if the unit has a TNC male on one end, and an SC male on the other end, the reference line should be established using an SC male-female pair so that only one adapter will have to be changed to measure insertion loss through the unit under test.

Make sure the directional couplers used for calibration can pass the frequencies required for testing.

- b. Connect USM-402 components for calibration per fig 1.

**Table 2. Insertion Loss Setup (Continued)**

c. On the sweep oscillator, set the below controls:

**NOTE**

Off is with black ring visible.

SWEEP TIME (SEC)	0.001
VARIABLE	Midrange
TRIGGER INT	On (pressed)
MANUAL SWEEP	Full CCW and pushed
RF MARKER	Off
RF AM	Off
RF BLANKING	Off
MARKER AMPL	OFF (full CCW)

**NOTE**

Countermeasures set antenna system sweep frequencies are listed in Countermeasures Set Sweep Frequencies, table 1 (A1-F18AC-760-210/(C), WP020 00).

Countermeasures warning and control system sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00).

Sweep Mode	M1/M2
M1	Set at lowest frequency of interest.
$\Delta F$	Not used
$F_o$	Not used
$F_o$ FINE	Not used
M2	Set at highest frequency of interest

d. On the oscillator unit, set the below controls:

LEVELING	INT
PM (RF OFF)	On (pressed)

**NOTE**

Countermeasures set antenna sweep frequencies are listed in Countermeasures Set Sweep Frequencies, table 1 (A1-F18AC-760-210/(C), WP020 00).

Countermeasures warning and control system sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00).

**Table 2. Insertion Loss Setup (Continued)**

- e. On the controller, set the below controls:

**NOTE**

Select the narrowest spectrum that includes selected range and sweep frequencies.

FREQ RANGE GHz  
LEVEL CONTROL

Select range and frequency scale of interest.  
Maximum leveled power (turn LEVEL CONTROL  
maximum CW until UNLEVELED WHEN LIT  
lamp comes on, then CCW until lamp goes out).

- f. On the swept amplitude analyzer, set the below controls:

SMOOTHING

Off (out)

CHANNEL A

DISPLAY

Off (Slightly pressing one of the CHANNEL A  
DISPLAY pushbuttons will turn off channel A)

CHANNEL B

DISPLAY  
OFFSET dB  
OFFSET CAL  
dB/DIV

B/R  
+00.0  
ON  
2

- g. On the oscilloscope, set the below controls:

AC/DC  
MAGNIFIER

DC  
X5

- h. On swept amplitude analyzer, use the CHANNEL B OFFSET CAL vernier to position vertically the left edge of the trace on the crt position graticule. The trace now represents the upper reference line.

**NOTE**

Do not change CHANNEL B OFFSET CAL vernier setting until the measurement is completed.

- i. Measure the peak-to-peak variation of the reference line. If peak-to-peak variation is greater than 2 dB, inspect USM-402 hookup for loose connections. Replace USM-402, if no faults are found in hookup.
- j. Do table 4, RECORDER SETUP.

Table 3. Return Loss Setup

Support Equipment Required	
Part Number or Type Designation	Nomenclature
AN/USM-402A(V)1	Swept Frequency Measurement Test Set
Materials Required	
None	
1. Procedure.	
a. Use fig 2 to select USM-402 components for return loss setup.	
<div>CAUTION</div>	
When connecting 7mm adapters to directional couplers, do not tighten both connectors at the same time. Tightening both connectors at the same time may cause an over-tight condition, damaging connector threads.	
NOTE	
Make sure the directional couplers used for calibration, can pass the frequencies required for testing.	
b. Connect USM-402 components for calibration per fig 2.	
c. On the oscillator, set the below controls:	
LEVELING PM (RF OFF)	INT On (pressed)
NOTE	
Countermeasures set antenna system sweep frequencies are listed in Countermeasures Set Sweep Frequencies, table 1 (A1-F18AC-760-210/(C), WP020 00).	
Countermeasures warning and control system sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00).	

**Table 3. Return Loss Setup (Continued)**

- d. On the controller, set the below controls:

**NOTE**

Select the narrowest spectrum that includes selected range and sweep frequencies.

FREQ RANGE GHz

Select range and frequency scale of interest.

LEVEL CONTROL

Maximum leveled power (turn LEVEL CONTROL maximum CW until UNLEVELED WHEN LIT lamp comes on, then CCW until lamp goes out).

- e. On the sweep oscillator, set the below controls:

**NOTE**

Off is with black ring visible.

SWEEP TIME (SEC)

0.01

VARIABLE

Midrange

TRIGGER INT

On (pressed)

MANUAL SWEEP

Full CCW and pushed

RF MARKER

Off

RF AM

Off

RF BLANKING

Off

MARKER AMPL

OFF (full CCW)

Sweep Mode

M1/M2

**NOTE**

Countermeasures set antenna system sweep frequencies are listed in Countermeasures Set Sweep Frequencies, table 1 (A1-F18AC-760-210/(C), WP020 00).

Countermeasures warning and control system sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00).

M1

Set at lowest frequency of interest.

$\Delta F$

Not used

$F_o$

Not used

$F_o$  FINE

Not used

M2

Set at highest frequency of interest.

- f. On the swept amplitude analyzer, set the below controls:

SMOOTHING

Off (out)

CHANNEL A

DISPLAY

A/R

OFFSET dB

+00.0

OFFSET CAL

ON

dB/DIV

10

CHANNEL B

DISPLAY

Off (Slightly pressing one of the CHANNEL B DISPLAY pushbuttons will turn off channel B)

Table 3. Return Loss Setup (Continued)

g. On the oscilloscope, set the below controls:	
AC/DC	DC
MAGNIFIER	X5
h. On swept amplitude analyzer, use the CHANNEL A OFFSET CAL vernier to position the left edge of the trace on the crt position graticule.	
i. Set the CHANNEL A dB/DIV to 2 dB/DIV and again position the left edge of the trace on the crt position graticule using the CHANNEL A OFFSET CAL vernier. The trace now represents the reference line.	
<b>NOTE</b>	
Do not change CHANNEL A OFFSET CAL vernier setting until the measurement is completed.	
j. Measure the peak-to-peak variation of the reference line. If greater than 3 dB, inspect USM-402 hookup for loose connectors. Replace USM-402, if no faults are found in hookup.	
k. On swept amplitude analyzer, set CHANNEL A dB/DIV to 5.	
l. Do table 4, RECORDER SETUP.	

Table 4. Recorder Setup

<b>Support Equipment Required</b>	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
AN/USM-402A(V)1	Swept Frequency Measurement Test Set
<b>Materials Required</b>	
None	
1. Procedure.	
a. On the recorder, set the below controls:	
POWER	Off (switch light is out)
SERVO	OFF
CHART	OFF
CHART	OFF
X module selector switch (left slide switch)	X1
Y module selector switch (middle slide switch)	Y1
SETUP/RECORD switch (right slide switch)	SETUP
X1 RANGE	0.5 VOLTS/INCH
Y1 RANGE	0.5 VOLTS/INCH



**Table 4. Recorder Setup (Continued)**

- b. On the sweep oscillator, set the below controls:

VARIABLE	CAL
Sweep Mode	M1/M2

**NOTE**

Countermeasures set antenna system sweep frequencies are listed in Countermeasures Set Sweep Frequencies, table 1 (A1-F18AC-760-210/(C), WP020 00).

Countermeasures warning and control system sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00).

- c. On the controller, set the below controls:

**NOTE**

Select the narrowest spectrum that includes selected range and sweep frequencies.

FREQ RANGE GHz	Select range and frequency scale of interest.
LEVEL CONTROL	Maximum leveled power (turn LEVEL CONTROL maximum CW until UNLEVELED WHEN LIT lamp comes on, then CCW until lamp goes out).

- d. On the swept amplitude analyzer, set the below controls:

CHANNEL A

dB/DIV	5
DISPLAY (for insertion loss)	Off
DISPLAY (for return loss)	A/R

CHANNEL B

dB/DIV	5
DISPLAY (for insertion loss)	B/R
DISPLAY (for return loss)	Off

- e. Place disposable fiber tip pen in holder on recorder arm.
- f. Set RMT PEN LIFT switch on control panel to OFF.
- g. On recorder, press POWER switch (switch light comes on).
- h. Place graph paper on recorder.

**NOTE**

The CHART switch activates an electrostatic paper hold-down. Under conditions of high humidity and/or high wind, the electrostatic force may be insufficient and it may be necessary to secure the graph paper with tape.

- i. Press recorder CHART switch and use the mechanical hold-down to secure graph paper.

**Table 4. Recorder Setup (Continued)**

- j. On sweep oscillator, select manual sweep mode by pulling MANUAL SWEEP knob to the out position.



To avoid damaging the crt, reduce the crt intensity when manual sweep mode is selected.

- k. Adjust oscilloscope INTENSITY CONTROL until initial point of trace is just visible.
- l. On sweep oscillator, set the MANUAL SWEEP knob to the maximum CCW position. A dot should be visible on the left side of the crt position graticule.
- m. On control panel, set RCDR CHAN switch to B for the insertion loss setup, or A for the return loss setup.
- n. On recorder, press SERVO Pushbutton switch.
- o. Use X and Y ZERO controls to position the recorder pen over the vertical grid line at the left margin one major division (1 inch) from the top of the graph paper grid.
- p. On sweep oscillator, set the MANUAL SWEEP knob to maximum CW position to move recorder pen to right margin.
- q. On recorder, adjust the X VERNIER control to position the recorder pen on the vertical grid line at the right margin.
- r. On sweep oscillator, turn MANUAL SWEEP knob to maximum CCW position. Check that the recorder pen is on the left vertical grid line. Adjust X ZERO control for correct position.
- s. On swept amplitude analyzer, select 5 dB/DIV and dial in +10.0 on the OFFSET dB thumbwheels for the channel being used. The recorder pen moves down two divisions (2 inches).
- t. On recorder, adjust the Y VERNIER control so that the recorder pen is exactly two major divisions (2 inches) down the graph paper.
- u. Dial in +00.0 on the OFFSET dB thumbwheels for the swept amplitude analyzer channel being used. If the recorder pen does not move back to its original position, one major division from the top of the graph, move the pen to that position using the Y ZERO control, and repeat steps s and t.
- v. On swept amplitude analyzer, set applicable OFFSET dB thumbwheel switches at +10 dB increments, make sure that recorder pen moves two major divisions for each +10 dB of offset dialed in.
- w. Repeat steps r through t until the recorder pen moves down two major divisions for each -10 dB of offset dialed in.
- x. Press recorder SERVO switch to off.

**Table 5. Recorder Reference Line Recording**

<b>Support Equipment Required</b>	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
AN/USM-402A(V) 1	Swept Frequency Measurement Test Set
<b>Materials Required</b>	
None	
1. Procedure.	
a. On the sweep oscillator, set the below controls:	
<b>NOTE</b>	
Countermeasures set antenna system sweep frequencies are listed in Countermeasures Set Sweep Frequencies, table 1 (A1-F18AC-760-210/(C), WP020 00).	
Countermeasures warning and control system sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00).	
Off is with black ring visible.	
SWEEP TIME (SEC)	0.01
VARIABLE	Midrange
MANUAL SWEEP	Pushed in
RF MARKER	Off
RF AM	Off
RF BLANKING	Off
MARKER AMPL	OFF (fully CCW)
Sweep Mode	M1/M2
M1	Set at lowest frequency of interest.
$\Delta F$	Not used
F <sub>o</sub>	Not used
F <sub>o</sub> FINE	Not used
M2	Set at highest frequency of interest.
b. On the oscillator unit, set the below controls:	
LEVELING	INT
PM (RF OFF)	On (pressed)

**Table 5. Recorder Reference Line Recording (Continued)**

- c. On the controller, set the below controls:

**NOTE**

Countermeasures set antenna system sweep frequencies are listed in Countermeasures Set Sweep Frequencies, table 1 (A1-F18AC-760-210/(C), WP020 00).

Countermeasures warning and control system sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00).

Select the narrowest spectrum that includes selected range and sweep frequencies.

FREQ RANGE GHz

Select range and frequency scale of interest.

LEVEL CONTROL

Maximum leveled power (turn LEVEL CONTROL maximum CW until UNLEVELED WHEN LIT lamp comes on, then CCW until lamp goes out).

- d. On the swept amplitude analyzer, set the below controls:

SMOOTHING Off (out)

CHANNEL A

OFFSET dB +00.0

OFFSET CAL ON

DISPLAY (for insertion loss) Off

DISPLAY (for return loss) A/R

CHANNEL B

OFFSET dB +00.0

OFFSET CAL ON

DISPLAY (for insertion loss) B/R

DISPLAY (for return loss) Off

- e. For return loss test, on swept amplitude analyzer, set CHANNEL A dB/DIV to 5.
- f. For insertion loss test, on swept amplitude analyzer, set CHANNEL B dB/DIV to 5.
- g. Place new graph paper on the recorder. Use recorder CHART switch to hold graph paper in place or use the mechanical holddown if the electrostatic holddown is not satisfactory.



To avoid damaging the crt, reduce the crt intensity when manual sweep mode is selected.

- h. On sweep oscillator, pull MANUAL SWEEP knob to the out position.

**Table 5. Recorder Reference Line Recording (Continued)**

- i. Rotate the MANUAL SWEEP knob fully CCW.
- j. When recording, ensure that the correct channel (A for return loss or B for insertion loss) is selected on the control panel.
- k. On recorder, set SETUP/RECORD switch to SETUP.
- l. Press recorder SERVO switch to on.
- m. Using X and Y ZERO controls, position the recorder pen over the vertical grid line at the left margin one major division from the top of the graph paper grid.
- n. On recorder, press SERVO switch to OFF.
- o. On sweep oscillator, set TRIGGER to EXT and SWEEP TIME (SEC) to 10.

**NOTE**

Pushing in MANUAL SWEEP knob may start a sweep. When a sweep is started, it can be reset by pushing the sweep oscillator TRIGGER SINGLE sweep pushbutton.

- p. Push MANUAL SWEEP knob in.
- q. On oscilloscope, adjust INTENSITY control until trace is just visible.
- r. On recorder, press SERVO switch to on and set SETUP/RECORD switch to RECORD.
- s. On control panel, set RMT PEN LIFT switch to ON.
- t. On sweep oscillator, press TRIGGER SINGLE pushbutton to initiate a sweep.

**NOTE**

When more than one reference line recording is required by a procedural step, repeat steps u and v for each required line.

- u. When the recorder arm has reset after completing the sweep, set swept amplitude analyzer OFFSET dB thumbwheel switches to the applicable allowable loss, listed in test procedure.
- v. On sweep oscillator, press TRIGGER SINGLE pushbutton.
- w. When the recorder arm has reset after completing the sweep, on swept amplitude analyzer, set OFFSET dB thumbwheel switches to 00.0.
- x. On control panel, set RMT PEN LIFT switch to OFF.
- y. On recorder, press SERVO switch to OFF.
- z. On sweep oscillator, set SWEEP TIME (SEC) to 0.01 and TRIGGER to INT.

**Table 6. Measurement Recording**

Support Equipment Required	
Part Number or Type Designation	Nomenclature
AN/USM-402A(V)1	Swept Frequency Measurement Test Set
Materials Required	
None	
1. Procedure.	
a. Record measurements by doing the substeps below:	
(1) On oscilloscope, adjust INTENSITY control until trace is just visible.	
(2) On sweep oscillator, set SWEEP TIME (SEC) to 10 and TRIGGER to EXT.	
(3) When trace is complete on recorder, press SERVO switch to on.	
(4) On control panel, set RMT PEN LIFT switch to ON.	
(5) On sweep oscillator, press TRIGGER SINGLE pushbutton. Measurement of unit under test is recorded on graph paper.	
NOTE	
When testing a transmission line with low amplitude periodic variation, slow the sweep by setting the VARIABLE knob on the sweep oscillator fully CW.	
(6) After recorder arm has reset, on control panel, set RMT PEN LIFT switch to OFF.	
(7) On recorder, press SERVO switch to off.	

**Table 7. Fault Location**

Support Equipment Required	
Part Number or Type Designation	Nomenclature
AN/USM-402A(V)1	Swept Frequency Measurement Test Set
Materials Required	
None	
1. Procedure.	
a. Use fig 3 to select USM-402 components for fault location setup.	
b. Connect USM-402 components per figure 3, using same adapters as will be used to mate unit under test.	

Table 7. Fault Location (Continued)

- c. On the sweep oscillator, set the below controls:

**NOTE**

Off is with black ring visible.

SWEEP TIME (SEC)	0.01
VARIABLE	CAL
TRIGGER INT	On (pressed)
MANUAL SWEEP	Fully CCW and pushed
RF MARKER	Off
RF AM	Off
RF BLANKING	Off
MARKER AMPL	OFF (fully CCW)
Sweep Mode	$F_o/\Delta F$
M1	Not used
$\Delta F$	To be set later
$F_o$	Set at frequency where discontinuity was observed.
$F_o$ FINE	0
M2	Not used

- d. On the oscillator unit, set the below controls:

LEVELING	INT
PM (RF OFF)	On (pressed)

- e. On the controller, set the below controls:

**NOTE**

Countermeasures set antenna system sweep frequencies are listed in Countermeasures Set Sweep Frequencies, table 1 (A1-F18AC-760-210/(C), WP020 00).

Countermeasures warning and control system sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00).

Select the narrowest spectrum that includes selected range and sweep frequencies.

FREQ RANGE GHz	Select range and frequency scale of interest.
LEVEL CONTROL	Maximum leveled power (turn LEVEL CONTROL maximum CW until UNLEVELED WHEN LIT lamp comes on, then CCW until lamp goes out).

- f. On the swept amplitude analyzer, set the below controls:

SMOOTHING	Off (out)
<u>CHANNEL A</u>	
DISPLAY	Off
<u>CHANNEL B</u>	
DISPLAY	B/R
OFFSET dB	+00.0
OFFSET CAL	ON
dB/DIV	5

**Table 7. Fault Location (Continued)**

- g. On the oscilloscope, set the below controls:

AC/DC  
MAGNIFIER

DC  
X5

- h. Connect 14 foot calibration cable to power divider. Do not terminate calibration cable.

**NOTE**

The rf hookup extension cable may be used as a calibration cable. It is 14 feet  $\pm$  3 inches long.

- i. On swept amplitude analyzer, adjust the CHANNEL B OFFSET CAL vernier to position vertically the trace to the left vertical graticule on the crt.
- j. Adjust the sweep oscillator  $\Delta F$  control so that a ripple appears on the crt for every 2 feet of calibration cable. If the rf hookup cable is used, adjust  $\Delta F$  for seven ripples. The sweep oscillator  $F_0$  control can be adjusted slightly to position the bottom of a ripple skirt to the left vertical graticule. Ripple calibration factor is 2 feet.

**NOTE**

$\Delta F$  can be adjusted for other ripple calibration factors, such as 1 foot per ripple, if necessary.

- k. Remove the calibration cable and connect the power divider to the unit under test. The  $F_0$  control can be adjusted to position the bottom edge of a ripple skirt on the left vertical graticule line; however,  $\Delta F$  should not be changed from the calibration setting.

**NOTE**

Multiple defects can cause very complex displays, making evaluation of the number of ripples due to any one defect extremely difficult. Each repetitive ripple pattern must be counted independently even though it is superimposed on other patterns.

- l. Count the number of ripples including fractions of a ripple.
- m. Multiply number of ripples including fractions of a ripple for each repetitive ripple pattern by the ripple calibration factor. This distance, in feet, represents the distance to fault from where the USM-402 is connected to the unit under test.

**Table 8. Shutdown****Support Equipment Required**

**Part Number or  
Type Designation**

**Nomenclature**

AN/USM-402A(V)1

Swept Frequency  
Measurement Test Set

**Materials Required**

None



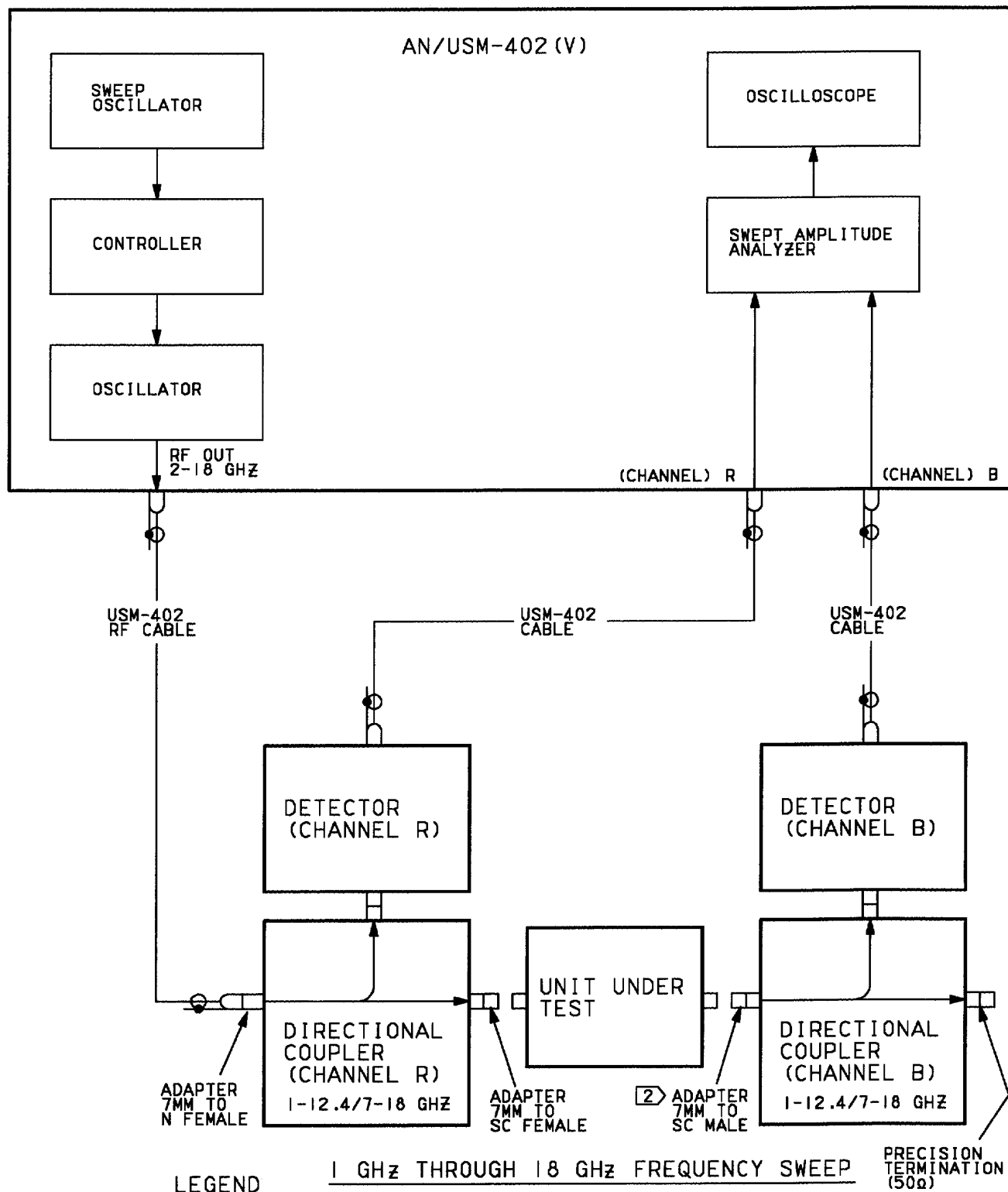
**Table 8. Shutdown (Continued)****1. Procedure.**

- a. If the recorder was used, zero pen assembly by pressing and holding X and Y ZERO CHECK pushbuttons until pen arm is at zero position.
- b. On recorder, press POWER and SERVO pushbuttons to off (pushbutton lamps are out).
- c. Cap disposable pen.
- d. On control panel, set POWER switch to OFF.
- e. Disconnect all rf hookup, power cables and store.

**NOTE**

Make sure all cable connectors and accessories are capped. If caps are not available, extend the threaded sleeve of 7mm connectors to protect the connector interface surface.

- f. Store accessories in the proper drawers.
- g. Remove recorder from top of USM-402 and install cover.
- h. Close all doors and drawers on USM-402 and secure. Fold down writing table.
- i. Cap USM-402 power connector 1J1.

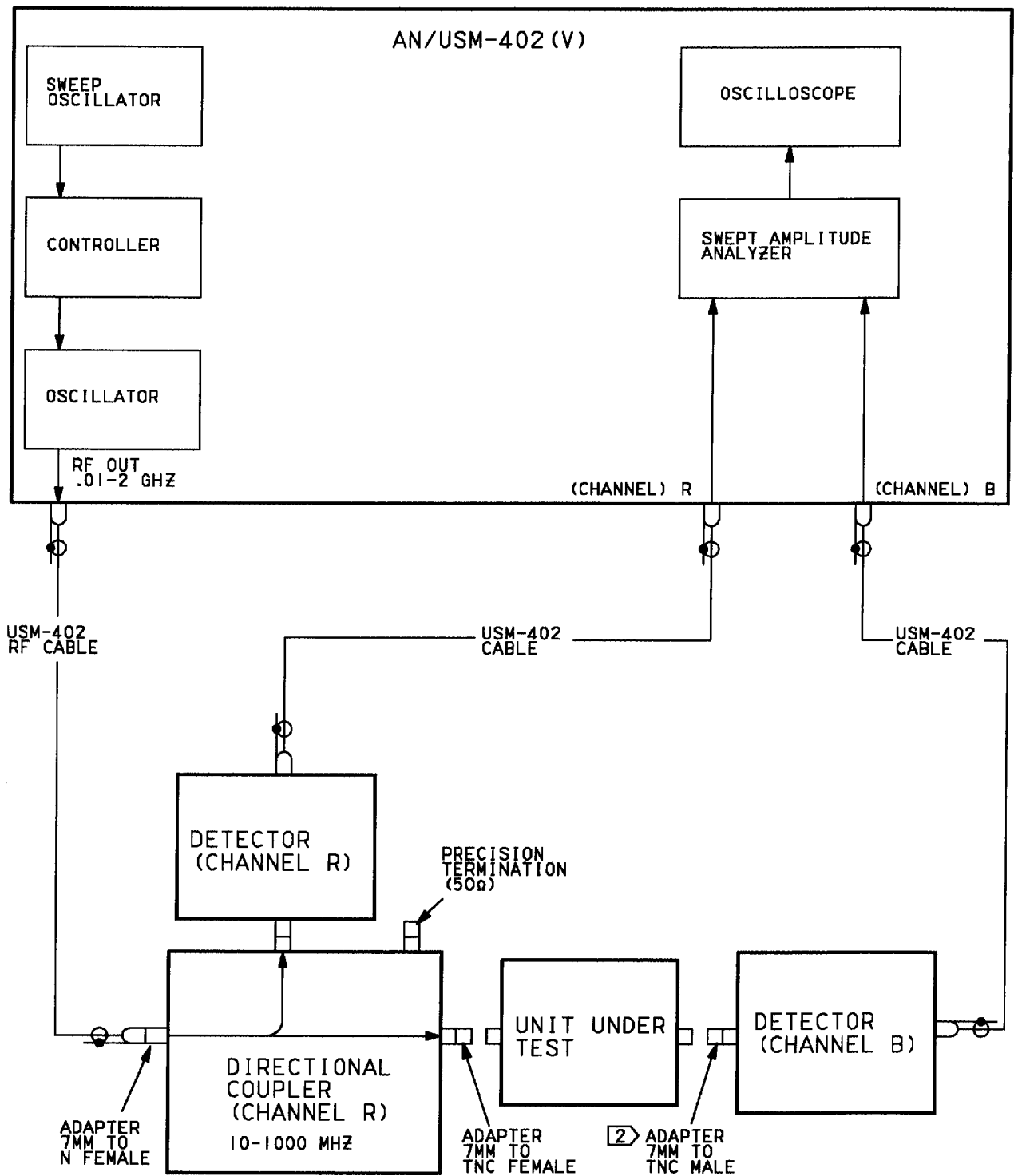


1. DURING CALIBRATION DIRECTIONAL COUPLER (CHANNEL R AND CHANNEL B) ARE CONNECTED TOGETHER.

2. ADAPTER USED FOR CALIBRATION ONLY.

Figure 1. Initial/Insertion Loss Setup (Sheet 1)

02000101



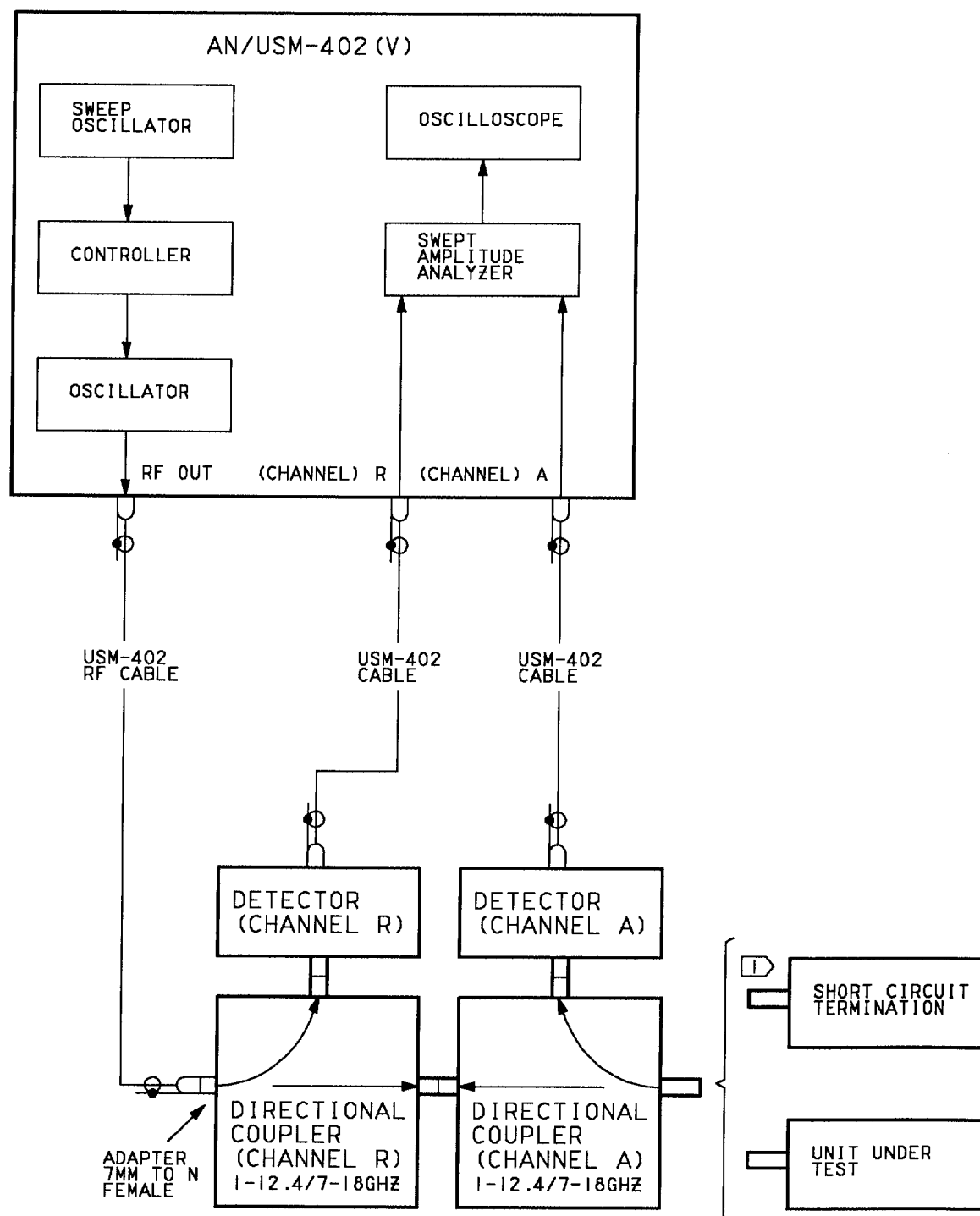
## LEGEND

100 MHz THROUGH 1 GHz FREQUENCY SWEEP

1. DURING CALIBRATION DIRECTIONAL COUPLER (CHANNEL R) IS CONNECTED TO DETECTOR (CHANNEL B).

2. ADAPTER USED FOR CALIBRATION ONLY.

Figure 1. Initial/Insertion Loss Setup (Sheet 2)



## LEGEND

- 1 SHORT CIRCUIT TERMINATION MATES DIRECTIONAL COUPLER (CHANNEL A) DURING USM-402 RETURN LOSS CALIBRATION.

Figure 2. Return Loss Setup

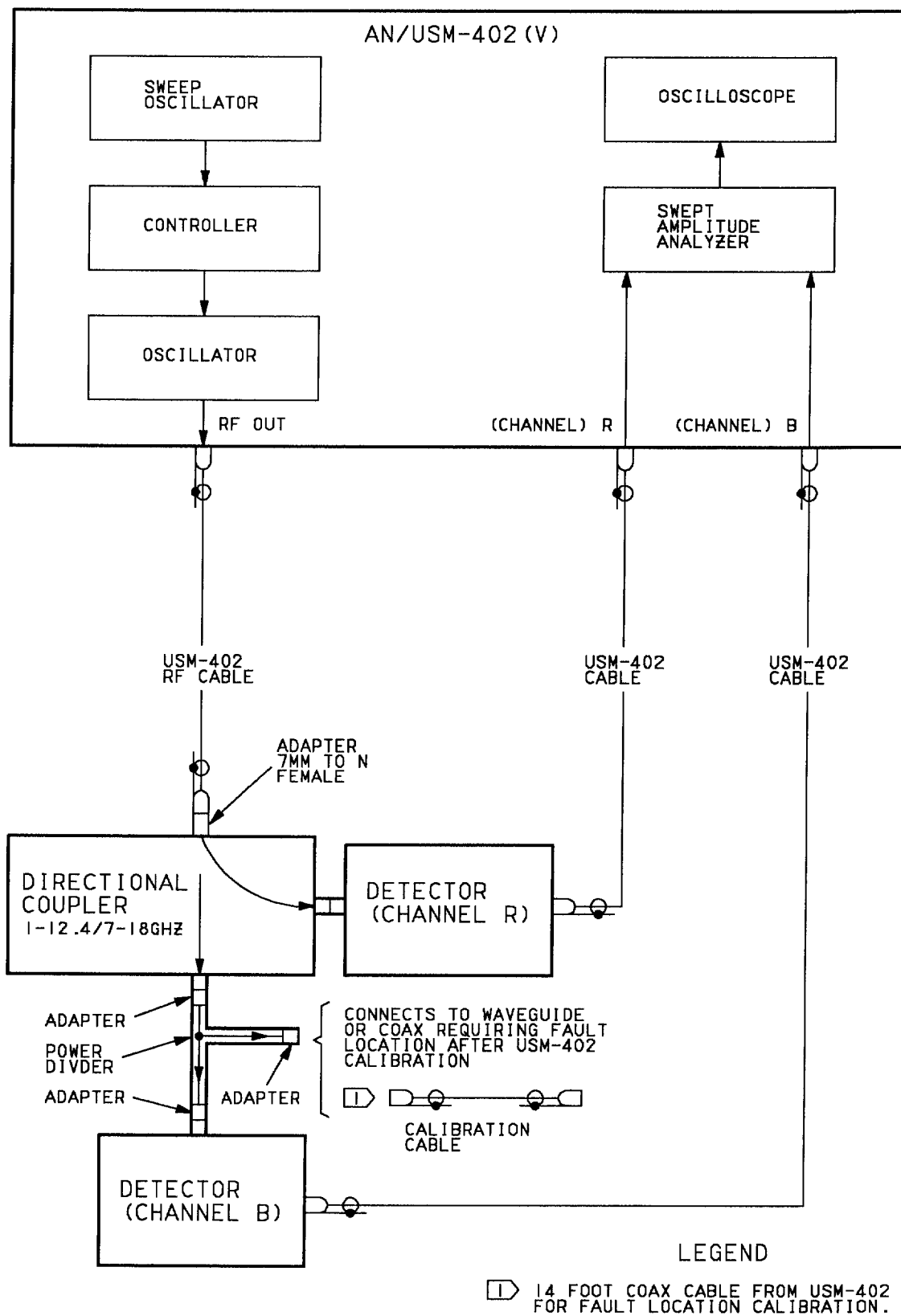


Figure 3. Fault Location Setup

**THIS PAGE INTENTIONALLY LEFT BLANK.**

---

**ORGANIZATIONAL MAINTENANCE****TESTING AND TROUBLESHOOTING****TESTING - AN/ALQ-126 LINE/ANTENNA RETURN LOSS AND INSERTION LOSS - LOW BAND****COUNTERMEASURES SET**

**This WP is incomplete without WP020 00 contained in Confidential Supplement A1-F18AC-760-210/(C).**

---

**Reference Material**

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Line Maintenance Access Doors .....	A1-F18AC-LMM-010
Tactical Electronic Warfare Systems .....	A1-F18AC-760-300
Aft Low Band Antenna AS-3418/ALQ-126 and Aft Low Band Radome .....	WP015 00
Forward Low Band Antenna AS-3418/ALQ-126 and Forward Low Band Radome .....	WP016 00
Tactical Electronic Warfare Systems .....	A1-F18AC-760-200
Line/Antenna Return Loss and Insertion Loss .....	WP020 00
Locator .....	WP024 00
Tactical Electronic Warfare Systems .....	A1-F18AC-760-210/(C)
Line/Antenna Return Loss and Insertion Loss .....	WP020 00

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Countermeasure Set Low Band Antenna Circuit, Figure 1 .....	13
Table 1. AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss - Low Band .....	2
Table 2. Low Band Test Hookup of Unit Under Test For Insertion Loss .....	8
Table 3. Low Band Test Hookup of Unit Under Test For Return Loss .....	8
Table 4. Hookup No. 1 Results Out of Tolerance .....	8
Table 5. Hookup No. 2 Results Out of Tolerance .....	10
Table 6. Hookup No. 3 results Out of Tolerance .....	12

**Record of Applicable Technical Directives**

None

**Table 1. AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss - Low Band**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p><b>System Required Components</b></p> <p>All Low Band Antenna System Components.</p> <p><b>Support Equipment Required</b></p> <p>None</p> <p><b>Materials Required</b></p> <p>None</p> <p><b>NOTE</b></p> <p>For locator, refer to WP024 00.</p> <p>1. PRELIMINARY.</p> <p>a. Make sure electrical power is off (A1-F18AC-LMM-000).</p> <p>b. Open door 14L (A1-F18AC-LMM-010).</p> <p>c. Disconnect 64P-E001C and 64P-E001L from Receiver Transmitter RT-1079( )/ALQ-126 (ALQ-126 receiver-transmitter). If ALQ-126 receiver-transmitter is not installed, remove 64P-E001C and 64P-E001L from the stowed position.</p> <p>d. Remove Aft Low Band Antenna AS-3418/ALQ-126 (A1-F18AC-760-300, WP015 00).</p> <p>e. Remove Forward Low Band Antenna AS-3418/ALQ-126 (A1-F18AC-760-300, WP016 00).</p> <p>f. Do Initial Setup (WP020 00).</p>		



**Table 1. AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss - Low Band (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>2. INSERTION LOSS TEST.</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p>Low band sweep frequencies are listed in Countermeasures Set Sweep Frequencies, table 1 (A1-F18AC-760-210/(C), WP020 00). Types of aircraft connectors are listed in table 2 and table 3, this WP.</p> <p>Note frequency where insertion loss/return loss limit is exceeded. This frequency is <math>F_0</math>, used in fault location.</p>		
<p>a. Do Insertion Loss Setup (WP020 00).</p> <p>b. Do Recorder Reference Line Recording for insertion loss (WP020 00). Set OFFSET dB thumbwheel switches:</p> <p style="padding-left: 40px;">(1) On 161353 THRU 161705 AND 161707 to 10.0 dB.</p> <p style="padding-left: 40px;">(2) On 161706, 161708 AND UP to 10.2 dB.</p> <p>c. Replace 7mm to SC male adapter on directional coupler (channel B) with a 7mm to TNC female adapter.</p> <p>d. Do hookup no. 1, table 2.</p> <p>e. Do Measurement Recording (WP020 00).</p> <p>f. Disconnect directional coupler (channel R) and directional coupler (channel B) from unit under test.</p> <p>g. Remove 7mm to TNC female adapter from directional coupler (channel B).</p> <p>h. Install 7mm to SC male adapter on directional coupler (channel B).</p>	<p>On 161353 THRU 161705 AND 161707, insertion loss measurement is not greater than 10.0 dB.</p> <p>On 161706, 161708 AND UP, insertion loss measurement is not greater than 10.2 dB.</p>	<p>Do table 4.</p> <p>Do table 4.</p>

**Table 1. AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss - Low Band (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>i. Connect 7mm to SC male adapter on directional coupler (channel B) to the 7mm to SC female adapter on directional coupler (channel R).</p> <p>j. Do Recorder Reference Line Recording for insertion loss (WP020 00). Set OFFSET dB thumbwheel switches:</p> <p>(1) On 161353 THRU 161705 AND 161707 to 8.0 dB.</p> <p>(2) On 161706, 161708 AND UP to 8.2 dB.</p> <p>k. Replace 7mm to SC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.</p> <p>l. Do hookup no. 2, table 2.</p> <p>m. Do Measurement Recording (WP020 00).</p> <p>n. Disconnect directional coupler (channel R) and directional coupler (channel B) from unit under test.</p> <p>o. Remove 7mm to TNC female adapter from directional coupler (channel B).</p> <p>p. Install 7mm to SC male adapter on directional coupler (channel B).</p> <p>q. Connect 7mm to SC male adapter on directional coupler (channel B) to the 7mm to SC female adapter on directional coupler (channel R).</p>	<p>On 161353 THRU 161705 AND 161707, insertion loss measurement is not greater than 8.0 dB.</p> <p>On 161706, 161708 AND UP, insertion loss measurement is not greater than 8.2 dB.</p>	<p>Do table 5.</p> <p>Do table 5.</p>

**Table 1. AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss - Low Band (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>r. Do Recorder Reference Line Recording for insertion loss (WP020 00). Set OFFSET dB thumbwheel switches:</p> <p>(1) On 161353 THRU 161705 AND 161707 to 8.0 dB.</p> <p>(2) On 161706, 161708 AND UP to 8.2 dB.</p> <p>s. Remove 7mm to SC female adapter from directional coupler (channel R) and 7mm to SC male adapter from directional coupler (channel B).</p> <p>t. Install 7mm to SC female adapter on directional coupler (channel B).</p> <p>u. Install 7mm to TNC female on directional coupler (channel R).</p> <p>v. Do hookup no. 3, table 2.</p> <p>w. Do Measurement Recording (WP020 00).</p> <p>x. Disconnect directional coupler (channel R) and directional coupler (channel B) from unit under test.</p> <p>y. Remove 7mm to TNC female adapter from directional coupler (channel R).</p> <p>z. Install 7mm to SC male adapter on directional coupler (channel R).</p>	<p>On 161353 THRU 161705 AND 161707, insertion loss measurement is not greater than 8.0 dB.</p> <p>On 161706, 161708 AND UP, insertion loss measurement is not greater than 8.2 dB.</p>	<p>Do table 6.</p> <p>Do table 6.</p>

**Table 1. AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss - Low Band (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>aa. Connect 7mm to SC male adapter on directional coupler (channel R) to 7mm to SC female adapter on directional coupler (channel B).</p> <p>ab. Do Recorder Reference Line Recording for insertion loss (WP020 00). Set OFFSET dB thumbwheel switches:</p> <p>(1) On 161353 THRU 161705 AND 161707 to 10.0 dB.</p> <p>(2) On 161706, 161708 AND UP to 10.2 dB.</p> <p>ac. Remove 7mm to SC female adapter from directional coupler (channel R) and 7mm to SC male adapter from directional coupler (channel B).</p> <p>ad. Install 7mm to SC female adapter on directional coupler (channel B).</p> <p>ae. Install 7mm to TNC female on directional coupler (channel R.)</p> <p>af. Do hookup no. 4, table 2.</p> <p>ag. Do Measurement Recording (WP020 00).</p>	<p>On 161353 THRU 161705 AND 161707, insertion loss measurement is not greater than 10.0 dB.</p> <p>On 161706, 161708 AND UP, insertion loss measurement is not greater than 10.2 dB.</p>	<p>Replace Low Band Coupler CU-2264/A (A1-F18AC-760-300, WP017 00).</p> <p>Replace Low Band Coupler CU-2264/A (A1-F18AC-760-300, WP017 00).</p>
<p>3. RETURN LOSS TEST.</p> <p>a. Do Return Loss Setup (WP020 00).</p> <p>b. Do Recorder Reference Line Recording for return loss (WP020 00). Set OFFSET dB thumbwheel switches to 7.4 dB.</p> <p>c. Remove short circuit termination from directional coupler (channel A).</p>		

**Table 1. AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss - Low Band (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>d. Do hookup no. 1, table 3.</p> <p>e. Do Measurement Recording (WP020 00).</p> <p>f. Disconnect directional coupler (channel A) from unit under test.</p> <p>g. Install short circuit termination on directional coupler (channel A).</p> <p>h. Do Recorder Reference Line Recording for return loss (WP020 00). Set OFFSET dB thumbwheel switches to 7.4 dB.</p> <p>i. Remove short circuit termination on directional coupler (channel A).</p> <p>j. Do hookup no. 2, table 3.</p> <p>k. Do Measurement Recording (WP020 00).</p>	<p>Return loss measurement is not less than 7.4 dB.</p>	<p>Replace Forward Low Band Antenna AS-3385/ALQ-126 (A1-F18AC-760-300, WP016 00).</p>
<p>4. FINAL.</p> <p>a. If this is last test, do Shutdown (WP020 00).</p> <p>b. Install Forward Low Band Antenna AS-3418/ALQ-126 (A1-F18AC-760-300, WP016 00).</p> <p>c. Install Aft Low Band Antenna AS-3418/ALQ-126 (A1-F18AC-760-300, WP015 00).</p> <p>d. Connect 64P-E001C and 64P-E001L to ALQ-126 receiver-transmitter. If ALQ-126 receiver-transmitter is not installed, install 64P-E001C and 64P-E001L in stow position.</p> <p>e. If this is last band test, close door 14L (A1-F18AC-LMM-010).</p>	<p>Return loss measurement is not less than 7.4 dB.</p>	<p>Replace Aft Low Band Antenna AS-3418/ALQ-126 (A1-F18AC-760-200, WP015 00).</p>

**Table 2. Low Band Test Hookup of Unit Under Test For Insertion Loss**

<b>Hookup No.</b>	<b>USM-402 Directional Coupler (Channel R)</b>	<b>Terminate Connectors With (50 ohm)</b>	<b>USM-402 Directional Coupler (Channel B)</b>
1 (Aft AS-3418/ALQ-126 transmit)	64P-E001C/3J3 (TNC Male)	64P-P005 (TNC Male) 64P-E001L/3J11 (SC Male)	64P-S006 (TNC Male)
2 (Forward AS-3418/ALQ-126 transmit)	64P-E001C/3J3 (TNC Male)	64P-S006 (TNC Male) 64P-E001L/3J11 (SC Male)	64P-P005 (TNC Male)
3 (Forward AS-3418/ALQ-126 receive)	64P-P005 (TNC Male)	64P-S006 (TNC Male) 64P-E001C/3J3 (TNC Male)	64P-E001L/3J11 (SC Male)
4 (Aft AS-3418/ALQ-126 receive)	64P-S006 (TNC Male)	64P-P005 (TNC Male) 64P-E001C/3J3 (TNC Male)	64P-E001L/3J11 (SC Male)

**Table 3. Low Band Test Hookup of Unit Under Test For Return Loss**

<b>Hookup No.</b>	<b>USM-402 Directional Coupler (Channel A)</b>
1	Forward Low Band Antenna AS-3418/ALQ-126 (TNC Female)
2	Aft Low Band Antenna AS-3418/ALQ-126 (TNC Female)

**Table 4. Hookup No. 1 Results Out of Tolerance**

<b>Support Equipment Required</b>	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
AN/USM-402A(V)1	Swept Frequency Measurement Test Set
—	Torque Wrench, 0 to 50 Inch-Pounds
<b>Materials Required</b>	
<b>Specification or Part Number</b>	<b>Nomenclature</b>
MS20995NC20	Lockwire

**Table 4. Hookup No. 1 Results Out of Tolerance (Continued)**

NOTE		
Countermeasures Set Low Band Antenna Circuit, Figure 1, must be used with this procedure.		
For locator, see WP024 00.		
Malfunction is caused by one of the below:		
ALQ-126 Low Band Coax Cable TE17		
ALQ-126 Low Band Coax Cable TE31		
ALQ-126 Low Band Coax Cable TE31A		
ALQ-126 Low Band Coax Cable TE31B		
Low Band Coupler CU-2264/A (64DCE002)		
Procedure	No	Yes
a. Do the substeps below:		
(1) Open door 33 (A1-F18AC-LMM-010).		
(2) Remove lockwire from connector 64P-E002A and disconnect from Low Band Coupler CU-2264/A (64DCE002).		
(3) Do Fault Location (WP020 00) on ALQ-126 Low Band Coax Cable TE17 (unit under test). Use fig 1 for length.		
(4) Does unit under test indicate a fault? .....	b	d
b. Do the substeps below:		
(1) Remove lockwire from connector 64P-E002B and disconnect from Low Band Coupler CU-2264/A(64DCE002).		
(2) Use fig 1 for length and do Fault Location (WP020 00) on:		
161363 THRU 161705 AND 161707, ALQ-126 Low Band Coax Cable TE31.		
161706, 161708 AND UP, ALQ-126 Low Band Coax Cable TE31A and TE31B.		
(3) Does unit under test indicate a fault?		
161353 THRU 161705 AND 161707? .....	c	e
161706, 161708 AND UP? .....	c	f
c. Replace Low Band Coupler CU-2264/A (64DCE002) (A1-F18AC-760-300, WP017 00). Do step g .....	-	-
d. When distance to fault includes coax connector 64P-E001C, inspect connector for damage and replace connector, if necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not include a coax connector, replace ALQ-126 Low Band Coax Cable TE17 (A1-F18AC-760-300, WP036 00). Do step g .....	-	-

**Table 4. Hookup No. 1 Results Out of Tolerance (Continued)**

Procedure	No	Yes
e. When distance to fault includes coax connector 64P-E002B or 64P-S006, inspect connector for damage and replace connector, if necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not include a coax connector, replace ALQ-126 Low Band Coax Cable TE31 (A1-F18AC-760-300, WP039 00). Do step g .....	-	-
f. Do the substeps below:		
(1) When distance to fault includes connector 64P-E002B or 64J-P021, inspect connectors for damage and replace connector, if necessary (A1-F18AC-WRM-000, WP137 00). If connectors are not damaged, replace ALQ-126 Low Band Coax Cable TE31A (A1-F18AC-760-300, WP039 00).		
(2) When distance to fault includes connector 64P-S021 or 64P-S006, replace ALQ-126 Low Band Coax Cable TE31B (A1-F18AC-760-300, WP039 00).		
(3) Do step g .....	-	-
g. If disconnected, removed, or opened during this procedure, make sure the items listed are connected, installed, or closed:		
(1) 64P-E002A (torque to 20 to 26 inch-pounds and safety with lockwire)		
(2) 64P-E002B (torque to 20 to 26 inch-pounds and safety with lockwire)		
(3) 64P-S021 (torque to 20 to 26 inch-pounds and safety with lockwire)		
(4) Door 33 .....	-	-

**Table 5. Hookup No. 2 Results Out of Tolerance**

Support Equipment Required	
Part Number or Type Designation	Nomenclature
AN/USM-402A(V)1	Swept Frequency Measurement Test Set
—	Torque Wrench, 0 to 50 Inch-Pounds
Materials Required	
Specification or Part Number	Nomenclature
MS20995NC20	Lockwire
NOTE	
Countermeasures Set Low Band Antenna Circuit, Figure 1, must be used with this procedure.	
For locator, see WP024 00.	



**Table 5. Hookup No. 2 Results Out of Tolerance (Continued)**

Malfunction is caused by one of the below:		
ALQ-126 Low Band Coax Cable TE30 ALQ-126 Low Band Coax Cable TE30A Low Band Coupler CU-2264/A (64DCE002)		
Procedure	No	Yes
a. Do the substeps below:		
(1) Open door 33 (A1-F18AC-LMM-010).		
(2) Remove lockwire from connector 64P-E002C and disconnect from Low Band Coupler CU-2264/A (64DCE002).		
(3) Use fig 1 for length and do Fault Location (WP020 00) on:		
161363 THRU 161705 AND 161707, ALQ-126 Low Band Coax Cable TE30.		
161706, 161708 AND UP, ALQ-126 Low Band Coax Cable TE30A.		
(4) Does unit under test indicate a fault?		
161353 THRU 161705 AND 161707? .....	b	c
161706, 161708 AND UP? .....	b	d
b. Replace Low Band Coupler CU-2264/A (64DCE002) (A1-F18AC-760-300, WP017 00). Do step e .....	-	-
c. Replace ALQ-126 Low Band Coax Cable TE30 (A1-F18AC-760-300, WP040 00). Do step e .....	-	-
d. Replace ALQ-126 Low Band Coax Cable TE30A (A1-F18AC-760-300, WP040 00). Do step e .....	-	-
e. If disconnected, removed, or opened during this procedure, make sure the items listed below are connected, installed, or closed:		
(1) 64P-E002C (torque to 20 to 26 inch-pounds and safety with lockwire)		
(2) Door 33 .....	-	-

**Table 6. Hookup No. 3 Results Out of Tolerance**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
AN/USM-402A(V)1	Swept Frequency Measurement Test Set	
—	Torque Wrench, 0 to 50 Inch-Pounds	
Materials Required		
Specification or Part Number	Nomenclature	
MS20995NC20	Lockwire	
NOTE		
Countermeasures Set Low Band Antenna Circuit, Figure 1, must be used with this procedure.		
For locator, see WP024 00.		
Malfunction is caused by one of the below:		
ALQ-126 Low Band Coax Cable TE22		
Low Band Coupler CU-2264/A (64DCE002)		
Procedure	No	Yes
a. Do the substeps below:		
(1) Open door 33 (A1-F18AC-LMM-010).		
(2) Remove lockwire from connector 64P-E002D and disconnect from Low Band Coupler CU-2264/A(64DCE002).		
(3) Do Fault Location (WP020 00) on ALQ-126 Low Band Coax Cable TE22 (unit under test). Use fig 1 for length.		
(4) Does unit under test indicate a fault? .....	b	c
b. Replace Low Band Coupler CU-2264/A (64DCE002) (A1-F18AC-760-300, WP016 00). Do step d .....	-	-
c. Replace ALQ-126 Low Band Coax Cable TE22 (A1-F18AC-760-300, WP036 00). Do step d .....	-	-
d. If disconnected, removed, or opened during this procedure, make sure items listed below are connected, installed or closed:		
(1) 64P-E002D (torque to 20 to 26 inch-pounds and safety with lockwire)		
(2) Door 33 .....	-	-

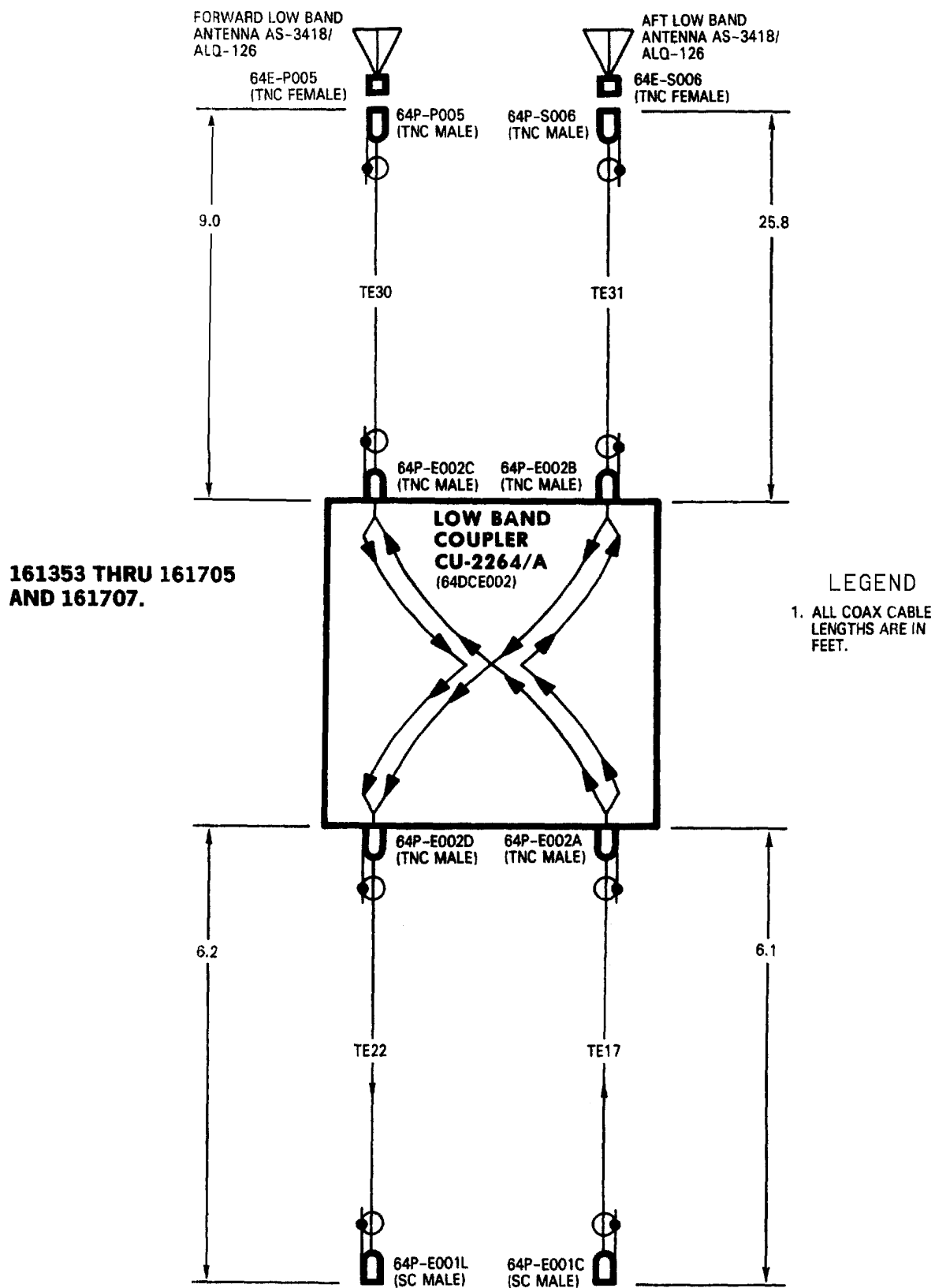


Figure 1. Countermeasures Set Low Band Antenna Circuit (Sheet 1)

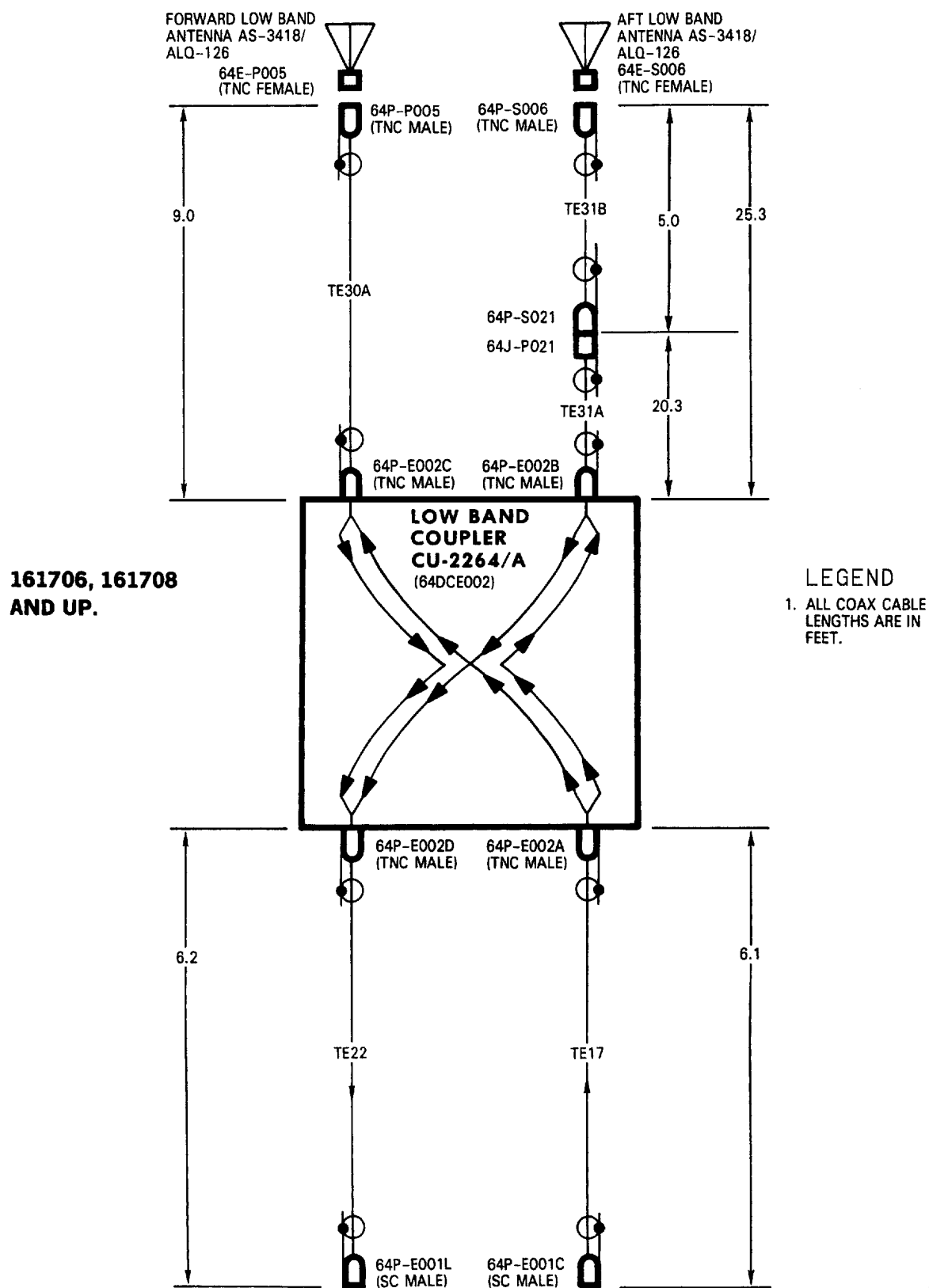


Figure 1. Countermeasures Set Low Band Antenna Circuit (Sheet 2)

---

**ORGANIZATIONAL MAINTENANCE****TESTING AND TROUBLESHOOTING****TESTING - AN/ALQ-126 LINE/ANTENNA RETURN LOSS AND INSERTION LOSS - MID BAND****COUNTERMEASURES SET**

**This WP is incomplete without WP020 00 contained in Confidential Supplement A1-F18AC-760-210/(C)**

---

**Reference Material**

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Line Maintenance Access Doors .....	A1-F18AC-LMM-010
Tactical Electronic Warfare Systems .....	A1-F18AC-760-300
Aft Mid Band Antenna AS-3419/ALQ-126 and Aft Mid Band Radome .....	WP013 00
Forward Mid Band Antenna AS-3420/ALQ-126 and Forward Mid Band Radome .....	WP014 00
Tactical Electronic Warfare Systems .....	A1-F18AC-760-200
Line/Antenna Return Loss and Insertion Loss .....	WP020 00
Locator .....	WP024 00
Tactical Electronic Warfare Systems .....	A1-F18AC-760-210/(C)
Line/Antenna Return Loss and Insertion Loss .....	WP020 00

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Countermeasure Set Mid Band Antenna Circuit, Figure 1 .....	13
Table 1. AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss - Mid Band .....	2
Table 2. Mid Band Test Hookup of Unit Under Test For Insertion Loss .....	8
Table 3. Mid Band Test Hookup of Unit Under Test For Return Loss .....	8
Table 4. Hookup No. 1 Results Out of Tolerance .....	8
Table 5. Hookup No. 2 Results Out of Tolerance .....	10
Table 6. Hookup No. 3 Results Out of Tolerance .....	12

**Record of Applicable Technical Directives**

None

**Table 1. AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss -  
Mid Band**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p><b>System Required Components</b></p> <p>All Mid Band Antenna System Components.</p> <p><b>Support Equipment Required</b></p> <p>None</p> <p><b>Materials Required</b></p> <p>None</p> <p><b>NOTE</b></p> <p>For locator, refer to WP024 00.</p> <p>1. PRELIMINARY.</p> <p>a. Make sure electrical power is off (A1-F18AC-LMM-000).</p> <p>b. Open door 14L (A1-F18AC-LMM-010).</p> <p>c. Disconnect 64P-E001U and 64P-E001V from Receiver-Transmitter RT-1079( )/ALQ-126 (ALQ-126 receiver-transmitter). If ALQ-126 receiver-transmitter is not installed, remove 64P-E001U and 64P-E001V from the stowed position.</p> <p>d. Remove Aft Mid Band Antenna AS-3419/ALQ-126 (A1-F18AC-760-300, WP013 00).</p> <p>e. Remove Forward Mid Band Antenna AS-3420/ALQ-126 (A1-F18AC-760-300, WP014 00).</p> <p>f. Do Initial Setup (WP020 00).</p>		

**Table 1. AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss -  
Mid Band (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
2. INSERTION LOSS TEST.		
<p style="text-align: center;"><b>NOTE</b></p> <p>Mid band sweep frequencies are listed in Countermeasures Set Sweep Frequencies, table 1 (A1-F18AC-760-210/(C), WP020 00). Types of aircraft connectors are listed in table 2 and table 3, this WP.</p> <p>Note frequency where insertion loss/return loss limit is exceeded. This frequency is <math>F_0</math>, used in fault location.</p>		
<p>a. Do Insertion Loss Setup (WP020 00).</p> <p>b. Do Recorder Reference Line Recording for insertion loss (WP020 00). Set OFFSET dB thumbwheel switches:</p> <p style="padding-left: 40px;">(1) On 161353 THRU 161705 AND 161707 to 9.0 dB.</p> <p style="padding-left: 40px;">(2) On 161706, 161708 AND UP to 9.4 dB.</p> <p>c. Replace the 7mm to SC male adapter on directional coupler (channel B) with a 7mm to TNC female adapter.</p> <p>d. Do hookup no. 1, table 2.</p> <p>e. Do Measurement Recording (WP020 00).</p> <p>f. Disconnect directional coupler (channel R) and directional coupler (channel B) from unit under test.</p> <p>g. Remove 7mm to TNC female adapter from directional coupler (channel B).</p> <p>h. Install 7mm to SC male adapter on directional coupler (channel B).</p>	<p>On 161353 THRU 161705 AND 161707, insertion loss measurement is not greater than 9.0 dB.</p> <p>On 161706, 161708 AND UP, insertion loss measurement is not greater than 9.4 dB.</p>	<p>Do table 4.</p> <p>Do table 4.</p>

**Table 1. AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss -  
Mid Band (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>i. Connect 7mm to SC male adapter on directional coupler (channel B) to the 7mm to SC female adapter on directional coupler (channel R).</p> <p>j. Do Recorder Reference Line Recording for insertion loss (WP020 00). Set OFFSET dB thumbwheel switches:</p> <p>(1) On 161353 THRU 161705 AND 161707 to 12.0 dB.</p> <p>(2) On 161706, 161708 AND UP to 12.4 dB.</p> <p>k. Replace 7mm to SC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.</p> <p>l. Do hookup no. 2, table 2.</p> <p>m. Do Measurement Recording (WP020 00).</p> <p>n. Disconnect directional coupler (channel R) and directional coupler (channel B) from unit under test.</p> <p>o. Remove 7mm to TNC female adapter from directional coupler (channel B).</p> <p>p. Install 7mm to SC male adapter on directional coupler (channel B).</p> <p>q. Connect 7mm to SC male adapter on directional coupler (channel B) to the 7mm to SC female adapter on directional coupler (channel R).</p>	<p>On 161353 THRU 161705 AND 161707, insertion loss measurement is not greater than 12.0 dB.</p> <p>On 161706, 161708 AND UP, insertion loss measurement is not greater than 12.4 dB.</p>	<p>Do table 5.</p> <p>Do table 5.</p>



**Table 1. AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss -  
Mid Band (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>r. Do Recorder Reference Line Recording for insertion loss (WP020 00). Set OFFSET dB thumbwheel switches:</p> <p>(1) On 161353 THRU 161705 AND 161707 to 12.0 dB.</p> <p>(2) On 161706, 161708 AND UP to 12.4 dB.</p> <p>s. Remove 7mm to SC female adapter from directional coupler (channel R) and 7mm to SC male adapter from directional coupler (channel B).</p> <p>t. Install 7mm to SC female adapter on directional coupler (channel B).</p> <p>u. Install 7mm to TNC female on directional coupler (channel R).</p> <p>v. Do hookup no. 3, table 2.</p> <p>w. Do Measurement Recording (WP020 00).</p> <p>x. Disconnect directional coupler (channel R) and directional coupler (channel B) from unit under test.</p> <p>y. Remove 7mm to TNC female adapter from directional coupler (channel R).</p> <p>z. Install 7mm to SC male adapter on directional coupler (channel R).</p>	<p>On 161353 THRU 161705 AND 161707, insertion loss measurement is not greater than 12.0 dB.</p> <p>On 161706, 161708 AND UP, insertion loss measurement is not greater than 12.4 dB.</p>	<p>Do table 6.</p> <p>Do table 6.</p>

**Table 1. AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss -  
Mid Band (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>aa. Connect 7mm to SC male adapter on directional coupler (channel R) to 7mm to SC female adapter on directional coupler (channel B).</p> <p>ab. Do Recorder Reference Line Recording for insertion loss (WP020 00). Set OFFSET dB thumbwheel switches:</p> <p>(1) On 161353 THRU 161705 AND 161707 to 9.0 dB.</p> <p>(2) On 161706, 161708 AND UP to 9.4 dB.</p> <p>ac. Remove 7mm to SC female adapter from directional coupler (channel R) and 7mm to SC male adapter from directional coupler (channel B).</p> <p>ad. Install 7mm to SC female adapter on directional coupler (channel B).</p> <p>ae. Install 7mm to TNC female on directional coupler (channel R).</p> <p>af. Do hookup no. 4, table 2.</p> <p>ag. Do Measurement Recording (WP020 00).</p>	<p>On 161353 THRU 161705 AND 161707, insertion loss measurement is not greater than 9.0 dB.</p> <p>On 161706, 161708 AND UP, insertion loss measurement is not greater than 9.4 dB.</p>	<p>Replace Low Band Coupler CU-2264/A (A1-F18AC-760-300, WP017 00).</p> <p>Replace Low Band Coupler CU-2264/A (A1-F18AC-760-300, WP017 00).</p>
<p>3. RETURN LOSS TEST.</p> <p>a. Do Return Loss Setup (WP020 00).</p> <p>b. Do Recording Reference Line Recording for return loss (WP020 00). Set OFFSET dB thumbwheel switches to 7.4 dB.</p> <p>c. Remove short circuit termination from directional coupler (channel A).</p>		

**Table 1. AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss - Mid Band (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>d. Do hookup no. 1, table 3.</p> <p>e. Do Measurement Recording (WP020 00).</p> <p>f. Disconnect directional coupler (channel A) from unit under test.</p> <p>g. Install short circuit termination on directional coupler (channel A).</p> <p>h. Do Recorder Reference Line Recording for return loss (WP020 00). Set OFFSET dB thumbwheel switches to 7.4 dB.</p> <p>i. Remove short circuit termination from directional coupler (channel A).</p> <p>j. Do hookup no. 2, table 3.</p>	<p>Return loss measurement is not less than 7.4 dB.</p>	<p>Replace Forward Mid Band Antenna AS-3420/ALQ-126 (A1-F18AC-760-300, WP014 00).</p>
<p>k. Do Measurement Recording (WP020 00).</p> <p>4. FINAL.</p> <p>a. If this is last test, do Shutdown (WP020 00).</p> <p>b. Install Forward Mid Band Antenna AS-3420/ALQ-126 (A1-F18AC-760-300, WP014 00).</p> <p>c. Install Aft Mid Band Antenna AS-3419/ALQ-126 (A1-F18AC-760-300, WP013 00).</p> <p>d. Connect 64P-E001V and 64P-E001U to ALQ-126 receiver-transmitter. If ALQ-126 receiver-transmitter is not installed, install 64P-E001V and 64P-E001U in stow position.</p> <p>e. If this is last band test, close door 14L (A1-F18AC-LMM-010).</p>	<p>Return loss measurement is not less than 7.4 dB.</p>	<p>Replace Aft Mid Band Antenna AS-3419/ALQ-126 (A1-F18AC-760-300, WP013 00).</p>

**Table 2. Mid Band Test Hookup of Unit Under Test For Insertion Loss**

<b>Hookup No.</b>	<b>USM-402 Directional Coupler (Channel R)</b>	<b>Terminate Connectors With (50 ohm)</b>	<b>USM-402 Directional Coupler (Channel B)</b>
1 (AS-3420/ALQ-126 transmit)	64P-E001V/3J20 (SC Male)	64P-T008 (TNC Male) 64P-E001U/3J19 (SC Male)	64P-R007 (TNC Male)
2 (AS-3419/ALQ-126 transmit)	64P-E001V/3J20 (SC Male)	64P-R007 (TNC Male) 64P-E001U/3J19 (SC Male)	64P-T008 (TNC Male)
3 (AS-3419/ALQ-126 receive)	64P-T008 (TNC Male)	64P-R007 (TNC Male) 64P-E001V/3J320 (SC Male)	64P-E001U/3J19 (SC Male)
4 (AS-3420/ALQ-126 receive)	64P-R007 (TNC Male)	64P-T008 (TNC Male) 64P-E001V/3J20 (SC Male)	64P-E001U/3J19 (SC Male)

**Table 3. Mid Band Test Hookup of Unit Under Test For Return Loss**

<b>Hookup No.</b>	<b>USM-402 Directional Coupler (Channel A)</b>
1	Forward Mid Band Antenna AS-3420/ALQ-126 (TNC Female)
2	Aft Mid Band Antenna AS-3419/ALQ-126 (TNC Female)

**Table 4. Hookup No. 1 Results Out of Tolerance**

<b>Support Equipment Required</b>	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
AN/USM-402A(V)1	Swept Frequency Measurement Test Set
—	Torque Wrench, 0 to 50 Inch-Pounds
<b>Materials Required</b>	
<b>Specification or Part Number</b>	<b>Nomenclature</b>
MS20995NC2	Lockwire

**Table 4. Hookup No. 1 Results Out of Tolerance (Continued)**

NOTE		
Countermeasures Set Low Band Antenna Circuit, figure 1, must be used with this procedure.		
For locator, see WP024 00.		
Malfunction is caused by one of the below:		
ALQ-126 Low Band Coax Cable TE29		
ALQ-126 Low Band Coax Cable TE32		
ALQ-126 Low Band Coax Cable TE32A		
Low Band Coupler CU-2264/A (64DCE003)		
Procedure	No	Yes
a. Do the substeps below:		
(1) Open door 33 (A1-F18AC-LMM-010).		
(2) Remove lockwire from connector 64P-E003A and disconnect from Low Band Coupler CU-2264/A (64DCE003).		
(3) Do Fault Location (WP020 00) on ALQ-126 Mid Band Coax Cable TE29 (unit under test). Use fig 1 for length.		
(4) Does unit under test indicate a fault? .....	b	d
b. Do the substeps below:		
(1) Remove lockwire from connector 64P-E003B and disconnect from Low Band Coupler CU-2264/A (64DCE003).		
(2) Use fig 1 for length and do Fault Location (WP020 00) on:		
161363 THRU 161705 AND 161707, ALQ-126 Mid Band Coax Cable TE32.		
161706, 161708 AND UP, ALQ-126 Mid Band Coax Cable TE32A.		
(3) Does unit under test indicate a fault?		
161353 THRU 161705 AND 161707? .....	c	e
161706, 161708 AND UP? .....	c	f
c. Replace Mid Band Coupler CU-2264/A (64DCE003) (A1-F18AC-760-300, WP018 00). Do step g. ....	-	-
d. When distance to fault includes coax connector 64P-E001V, inspect connector for damage and replace connector, if necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not include a coax connector, replace ALQ-126 Mid Band Coax Cable TE29 (A1-F18AC-760-300, WP036 00). ....	-	-
e. Replace ALQ-126 Mid Band Coax Cable TE32 (A1-F18AC-760-300, WP037 00). Do step g. ....	-	-

**Table 4. Hookup No. 1 Results Out of Tolerance (Continued)**

Procedure	No	Yes
f. Replace ALQ-126 Mid Band Coax Cable TE32A (A1-F18AC-760-300, WP037 00). Do step g. ....	-	-
g. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 64P-E003A (Torque to 20 to 26 inch-pounds and safety with lockwire)		
(2) 64P-E003B (Torque to 20 to 26 inch-pounds and safety with lockwire)		
(3) Door 33 .....	-	-

**Table 5. Hookup No. 2 Results Out of Tolerance**

Support Equipment Required	
Part Number or Type Designation	Nomenclature
AN/USM-402A(V)1	Swept Frequency Measurement Test Set
—	Torque Wrench, 0 to 50 Inch-Pounds
Materials Required	
Specification or Part Number	Nomenclature
MS20995NC20	Lockwire
NOTE	
Countermeasures Set Low Band Antenna Circuit, Figure 1, must be used with this procedure.	
For locator, see WP024 00.	
Malfunction is caused by one of the items listed below:	
ALQ-126 Low Band Coax Cable TE33	
ALQ-126 Low Band Coax Cable TE33A	
ALQ-126 Low Band Coax Cable TE33B	
Low Band Coupler CU-2264/A (64DCE003)	

**Table 5. Hookup No. 2 Results Out of Tolerance (Continued)**

Procedure	No	Yes
a. Do the substeps below:		
(1) Open door 33 (A1-F18AC-LMM-010).		
(2) Remove lockwire from connector 64P-E003C and disconnect from Low Band Coupler CU-2264/A (64DCE003).		
(3) Use fig 1 for length and do Fault Location (WP020 00) on:		
161363 THRU 161705 AND 161707, ALQ-126 Mid Band Coax Cable TE33.		
161706, 161708 AND UP, ALQ-126 Mid Band Coax Cable TE33A and TE33B.		
(4) Does unit under test indicate a fault?		
161353 THRU 161705 AND 161707? .....	b	c
161706, 161708 AND UP? .....	b	d
b. Replace Low Band Coupler CU-2264/A (A1-F18AC-760-300, WP018 00). Do step e. ....	-	-
c. When distance to fault includes coax connector 64P-E003C or 64P-T008, inspect connector for damage and replace connector, if necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not include a coax connector, replace ALQ-126 Mid Band Coax Cable TE33 (A1-F18AC-760-300, WP038 00). Do step e. ....	-	-
d. Do the substeps below:		
(1) When distance to fault includes connector 64P-E003C or 64J-R022, inspect connectors for damage and replace connector, if necessary (A1-F18AC-WRM-000, WP137 00). If connectors are not damaged, replace ALQ-126 Mid Band Coax Cable TE33A (A1-F18AC-760-200, WP038 00).		
(2) When distance to fault includes connector 64P-T022 or 64P-T008, replace ALQ-126 Mid Band Coax Cable TE33B (A1-F18AC-760-300, WP038 00).		
(3) Do step e. ....	-	-
e. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 64P-E003C (torque to 20 to 26 inch-pounds and safety with lockwire)		
(2) 64P-T022 (torque to 20 to 26 inch-pounds and safety with lockwire)		
(3) Door 33 .....	-	-

**Table 6. Hookup No. 3 Results Out of Tolerance**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
AN/USM-402A(V)1	Swept Frequency Measurement Test Set	
—	Torque Wrench, 0 to 50 Inch-Pounds	
Materials Required		
Specification or Part Number	Nomenclature	
MS20995NC20	Lockwire	
NOTE		
Countermeasures Set Low Band Antenna Circuit, Figure 1, must be used with this procedure.		
For locator, see WP024 00.		
Malfunction is caused by one of the items listed below:		
ALQ-126 Low Band Coax Cable TE28		
Low Band Coupler CU-2264/A (64DCE003)		
Procedure	No	Yes
a. Do the substeps below:		
(1) Open door 33 (A1-F18AC-LMM-010).		
(2) Remove lockwire from connector 64P-E003D and disconnect from Low Band Coupler CU-2264/A (64DCE003).		
(3) Do Fault Location (WP020 00) on ALQ-126 Mid Band Coax Cable TE28 (unit under test). Use fig 1 for length.		
(4) Does unit under test indicate a fault? .....	b	c
b. Replace Low Band Coupler CU-2264/A (A1-F18AC-760-300, WP018 00). Do step d. ...	-	-
c. If distance to fault includes coax connector 64P-E001U, inspect connector for damage and replace connector, if necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not include a coax connector, replace ALQ-126 Mid Band Coax Cable TE28 (A1-F18AC-760-300, WP036 00). Do step d. ....	-	-
d. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 64P-E003D (torque to 20 to 26 inch-pounds and safety with lockwire)		
(2) Door 33 .....	-	-



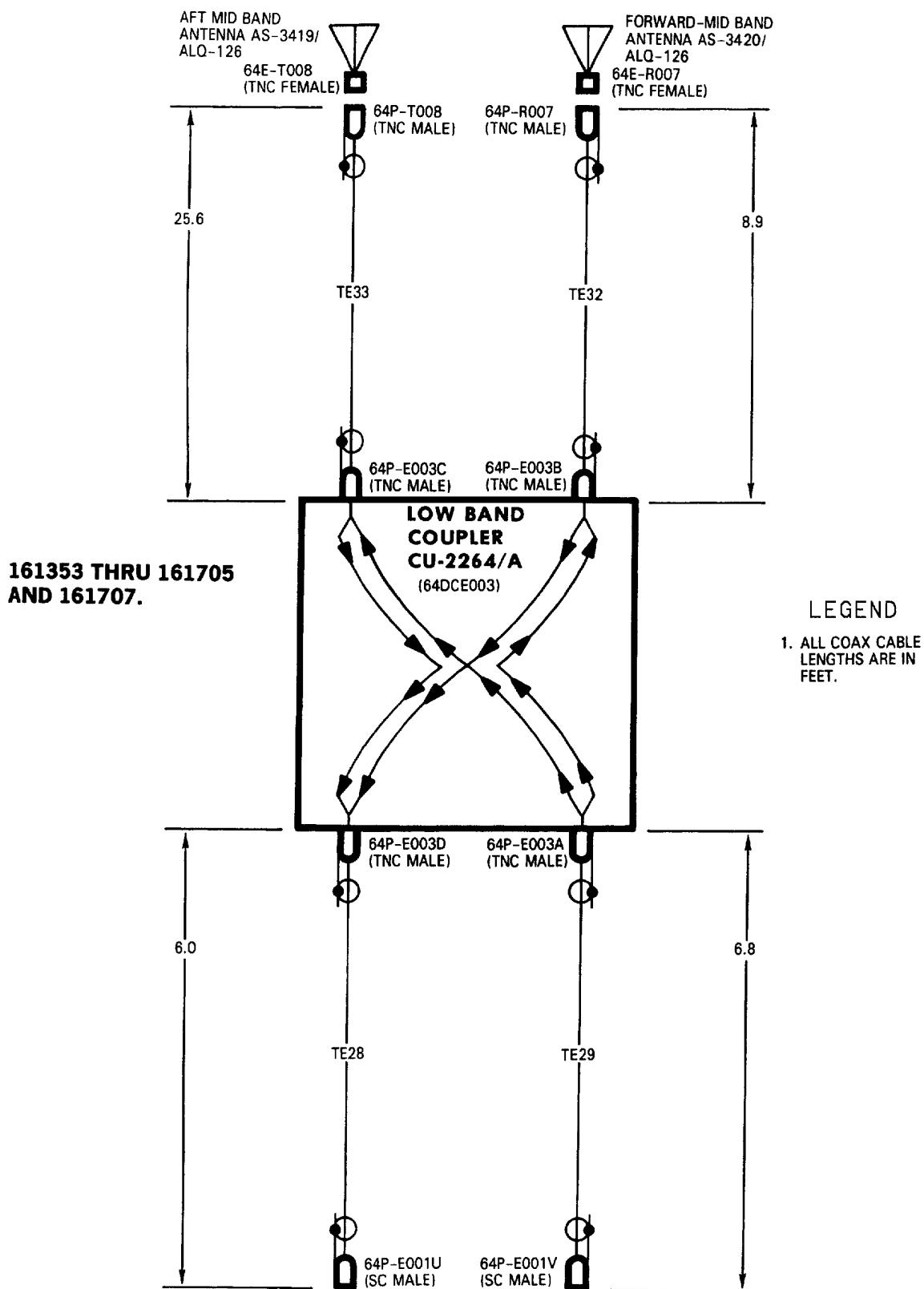


Figure 1. Countermeasure Set Mid Band Antenna Circuit (Sheet 1)

02200101

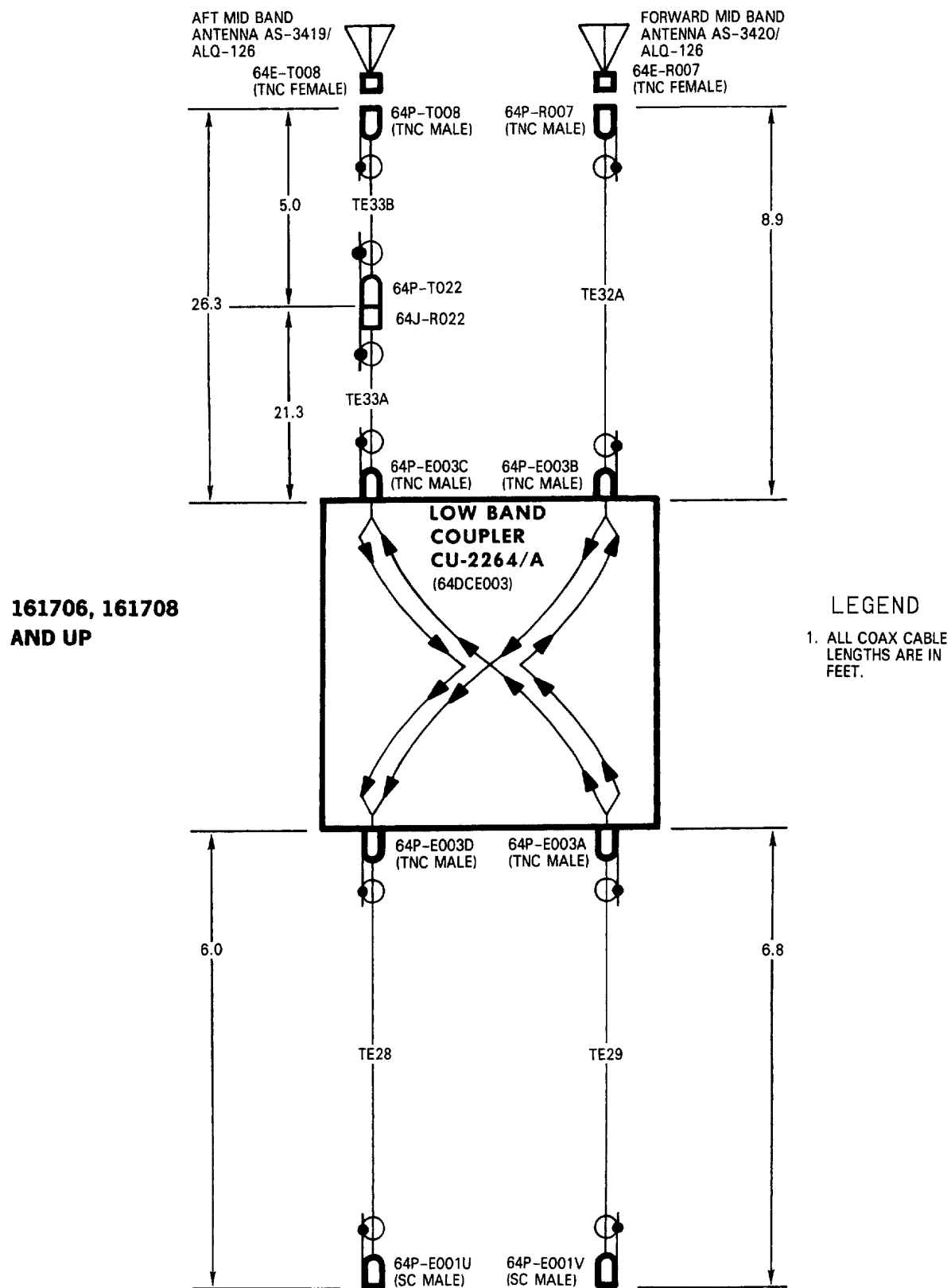


Figure 1. Countermeasure Set Mid Band Antenna Circuit (Sheet 2)

02200102

---

**ORGANIZATIONAL MAINTENANCE****TESTING AND TROUBLESHOOTING****TESTING - AN/ALQ-126 LINE/ANTENNA RETURN LOSS AND INSERTION LOSS - HIGH BAND****COUNTERMEASURES SET**

**This WP is incomplete without WP020 00 contained in Confidential Supplement A1-18AC-760-210/(C).**

---

**Reference Material**

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Line Maintenance Access Doors .....	A1-F18AC-LMM-010
Tactical Electronic Warfare Systems .....	A1-F18AC-760-300
Aft High Band Antenna AS-3421/ALQ-126 .....	WP011 00
Forward High Band Antenna AS-3385/ALQ-126 and Forward High Band Radome .....	WP012 00
Tactical Electronic Warfare Systems .....	A1-F18AC-760-200
Line/Antenna Return Loss and Insertion Loss .....	WP020 00
Locator .....	WP024 00
Tactical Electronic Warfare Systems .....	A1-F18AC-760-210/(C)
Line/Antenna Return Loss and Insertion Loss .....	WP020 00

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Countermeasures Set High Band Antenna Circuit, Figure 1 .....	15
Table 1. AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss - High Band .....	2
Table 2. High Band Test Hookup of Unit Under Test for Insertion Loss .....	8
Table 3. High Band Test Hookup of Unit Under Test for Return Loss .....	8
Table 4. Connection No. 1 Result Out of Tolerance .....	9
Table 5. Connection No. 2 Result Out of Tolerance .....	10
Table 6. Connection No. 3 Result Out of Tolerance .....	11
Table 7. Replacement Procedure Reference .....	13

**Record of Applicable Technical Directives**

None

**Table 1. AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss - High Band**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p><b>System Required Components</b></p> <p>All High Band Antenna System Components.</p> <p><b>Support Equipment Required</b></p> <p>None</p> <p><b>Materials Required</b></p> <p>None</p> <p><b>NOTE</b></p> <p>For locator, refer to WP024 00.</p>		
<p>1. PRELIMINARY.</p> <p>a. Make sure electrical power is off (A1-F18AC-LMM-000).</p> <p>b. Open door 14L (A1-F18AC-LMM-010).</p> <p>c. Disconnect 64P-E001S and 64P-E001R from Receiver-Transmitter RT-1079( )/ALQ-126 (ALQ-126 receiver-transmitter). If ALQ-126 receiver-transmitter is not installed, remove 64P-E001S and 64P-E001R from the stowed position.</p> <p>d. Remove Aft High Band Antenna AS-3421/ALQ-126 (A1-F18AC-760-300, WP011 00) (aft high band antenna).</p> <p>e. Remove Forward High Band Antenna AS-3385/ALQ-126, (forward high band antenna) (A1-F18AC-760-300, WP012 00).</p> <p>f. Do Initial Setup (WP020 00).</p>		

**Table 1. AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss - High Band (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
2. INSERTION LOSS TEST.		
<p style="text-align: center;"><b>NOTE</b></p> <p>High band sweep frequencies are listed in Countermeasures Set Sweep Frequencies, table 1 (A1-F18AC-760-210/(C), WP020 00). Types of aircraft connectors are listed in table 2 and table 3, this WP.</p> <p>Note frequency where insertion loss/return loss limit is exceeded. This frequency is <math>F_0</math>, used in fault location.</p>		
<p>a. Do Insertion Loss Setup (WP020 00), using a TNC male-female adapter pair. Install 7mm to TNC male adapter on directional coupler (channel B) and 7mm to TNC female adapter on directional coupler (channel R).</p> <p>b. Do Recorder Reference Line Recording for insertion loss (WP020 00). Set OFFSET dB thumbwheel switches to 14 dB.</p> <p>c. Remove 7mm to TNC male adapter from directional coupler (channel B).</p> <p>d. Install 7mm to waveguide (WRD- 750) adapter on directional coupler (channel B).</p> <p>e. Do hookup no. 1, table 2.</p> <p>f. Do Measurement Recording (WP020 00).</p> <p>g. Disconnect directional coupler (channel R) and directional coupler (channel B) from unit under test.</p> <p>h. Remove 7mm to waveguide (WRD-750) adapter from directional coupler (channel B).</p> <p>i. Install 7mm to TNC male adapter on directional coupler (channel B).</p> <p>j. Connect 7mm to TNC female adapter on directional coupler (channel R) to 7mm to TNC male adapter on directional coupler (channel B).</p>	<p>Insertion loss measurement is not greater than 14 dB.</p>	<p>Do table 4.</p>

**Table 1. AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss - High Band (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>k. Do Recorder Reference Line Recording for insertion loss (WP020 00). Set OFFSET dB thumbwheel switches to 14 dB.</p> <p>l. Remove 7mm to TNC male adapter from directional coupler (channel B).</p> <p>m. Install 7mm to waveguide (WRD-750) adapter on directional coupler (channel B).</p> <p>n. Do hookup no. 2, table 2.</p> <p>o. Do Measurement Recording (WP020 00).</p> <p>p. Disconnect directional coupler (channel R) and directional coupler (channel B) from unit under test.</p> <p>q. Remove 7mm to waveguide (WRD-750) adapter from directional coupler (channel B) and 7mm to TNC female adapter from directional coupler (channel R).</p> <p>r. Install 7mm to TNC female adapter on directional coupler (channel B).</p> <p>s. Install 7mm to TNC male adapter on directional coupler (channel R).</p> <p>t. Connect 7mm to TNC male adapter on directional coupler (channel R) to 7mm to TNC female adapter on directional coupler (channel B).</p> <p>u. Do Recorder Reference Line Recording for insertion loss (WP020 00). Set OFFSET dB thumbwheel switches to 15 dB.</p> <p>v. Remove 7mm to TNC male adapter from directional coupler (channel R).</p> <p>w. Install 7mm to waveguide (WRD-750) adapter on directional coupler (channel R).</p>	<p>Insertion loss measurement is not greater than 14 dB.</p>	<p>Do table 5.</p>

**Table 1. AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss - High Band (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
x. Do hookup no. 3, table 2.		
<p style="text-align: center;"><b>NOTE</b></p> <p>The High Band Suppression Filter F-1471/ALQ-126 will cause a notch in the insertion loss measurement, which exceeds the maximum allowable insertion loss.</p> <p>The attenuated frequency range (FR-1) is listed in Band Suppression Frequency Range, table 3 (A1-F18AC-760-210/(C), WP020 00).</p>		
y. Do Measurement Recording (WP020 00).	1. Insertion loss measurement is not greater than 15 dB.	Do table 6.
z. Disconnect directional coupler (channel R) and directional coupler (channel B) from unit under test.	2. The attenuated frequency range is equal to FR-1.	Replace High Band Suppression Filter F-1471/ALQ-126 (A1-F18AC-760-300, WP020 00).
aa. Remove 7mm to waveguide (WRD-750) adapter from directional coupler (channel R).		
ab. Install 7mm to TNC male adapter on directional coupler (channel R).		
ac. Connect 7mm to TNC male adapter on directional coupler (channel R) to 7mm to TNC female adapter on directional coupler (channel B).		
ad. Do Recorder Reference Line Recording for insertion loss (WP020 00). Set OFFSET dB thumbwheel switches to 15 dB.		
ae. Remove 7mm to TNC male adapter from directional coupler (channel R).		
af. Install 7mm to waveguide (WRD-750) adapter on directional coupler (channel R).		
ag. Do hookup no. 4, table 2.		

**Table 1. AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss - High Band (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>NOTE</b></p> <p>The High Band Suppression Filter F-1471/ALQ-126 will cause a notch in the insertion loss measurement, which exceeds the maximum allowable insertion loss.</p> <p>The attenuated frequency range (FR-1) is listed in Band Suppression Frequency Range, table 3, (A1-F18AC-760-210/(C), WP020 00).</p>		
ah. Do Measurement Recording (WP020 00).	1. Insertion loss measurement is not greater than 15 dB.	Replace High Band Coupler CU-22431A (A1-F18AC-760-300, WP019 00).
	2. The attenuated frequency range is equal to FR-1.	Replace High Band Suppression Filter F-1471/ALQ-126 (A1-F18AC-760-300, WP020 00).
3. RETURN LOSS TEST.		
a. Do Return Loss Setup (WP020 00).		
<p align="center"><b>NOTE</b></p> <p>Multiple reference line recordings are required for the Forward High Band Antenna AS-3385/ALQ-126.</p>		
b. Do Recorder Reference Line Recording for return loss (WP020 00). Set OFFSET dB thumbwheel switches to:		
(1) 10.2		
(2) 11.7		
c. Remove short circuit termination from direction coupler (channel A).		
d. Install 7mm to waveguide (WRD-750) adapter on directional coupler (channel A).		
e. Do hookup no. 1, table 3.		
f. Do Measurement Recording (WP020 00).	Return loss measurement is not less than 11.7 dB for 90% of the frequency band and 10.2 dB for the remaining 10%.	Replace Forward High Band Antenna AS-3385/ALQ-126 (A1-F18AC-760-300, WP012 00).
g. Disconnect directional coupler (channel A) from unit under test.		



**Table 1. AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss - High Band (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>h. Remove 7mm to waveguide (WRD-750) adapter from directional coupler (channel A).</p> <p>i. Install short circuit termination on directional coupler (channel A).</p> <p>j. Do Recorder Reference Line Recording for return loss (WP020 00). Set OFFSET dB thumbwheel switches to 12.7 dB.</p> <p>k. Remove short circuit termination from direction coupler (channel A).</p> <p>l. Install 7mm to waveguide (WRD-750) adapter on directional coupler (channel A).</p> <p>m. Do hookup no. 2, table 3.</p> <p>n. Do Measurement Recording (WP020 00).</p> <p>4. FINAL.</p> <p>a. Install forward high band antenna (A1-F18AC-760-300, WP012 00).</p> <p>b. Install aft high band antenna (A1-F18AC-760-300, WP011 00).</p> <p>c. If this is last test, do Shutdown (WP020 00).</p> <p>d. Connect 64P-E001R and 64P-E001S to ALQ-126 receiver-transmitter. If ALQ-126 receiver-transmitter is not installed, install 64P-E001R and 64P-E001S in stow position.</p> <p>e. Close door 14L (A1-F18AC-LMM-010).</p>	<p>Return loss measurement is not less than 12.7 dB.</p>	<p>Replace Aft High Band Antenna AS-3421/ALQ-126 (A1-F18AC-760-300, WP011 00).</p>

**Table 2. High Band Test Hookup of Unit Under Test For Insertion Loss**

<b>Hookup No.</b>	<b>USM-402 Directional Coupler (Channel R)</b>	<b>Terminate Connectors With (50 ohm)</b>	<b>USM-402 Directional Coupler (Channel B)</b>
1 (AS-3421/ALQ-126 transmit)	64P-E001S/3J17 (TNC Male)	64P-E001R/3J16 (TNC Male) and Forward AN/ALQ-126 Antenna Waveguide Segment 9 (WRD-750)	Aft AN/ALQ-126 Antenna Waveguide Segment 12 (WRD-750)
2 (AS-3385/ALQ-126 transmit)	64P-E001S/3J17 (TNC Male)	64P-E001R/3J16 (TNC Male) and Aft AN/ALQ-126 Antenna Waveguide Segment 12 (WRD-750)	Forward AN/ALQ-126 Antenna Waveguide Segment 9 (WRD-750)
3 (AS-3421/ALQ-126 receive)	Aft AN/ALQ-126 Antenna Waveguide Segment 12 (WRD-750)	64P-E001S/3J17 (TNC Male) and Forward AN/ALQ-126 Antenna Waveguide Segment 9 (WRD-750)	64P-E001R/3J16 (TNC Male)
4 (AS-3385/ALQ-126 receive)	Forward AN/ALQ-126 Antenna Waveguide Segment 9 (WRD-750)	64P-E001S/3J17 (TNC Male) and Aft AN/ALQ-126 Antenna Waveguide Segment 12 (WRD-750)	64P-E001R/3J16 (TNC Male)

**Table 3. High Band Test Hookup of Unit Under Test For Return Loss**

<b>Hookup No.</b>	<b>USM-402 Directional Coupler (Channel A)</b>
<b>NOTE</b>	
When testing AN/ALQ-126 High Band Antennas, make sure antennas are not within 5 feet of any metal objects.	
1	Forward High Band Antenna AS-3385/ALQ-126 (WRD-750)
2	Aft High Band Antenna AS-3421/ALQ-126 (WRD-750)

**Table 4. Connection No. 1 Result Out of Tolerance**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
AN/USM-402A(V)1	Swept Frequency Measurement Test Set	
—	Torque Wrench, 0 to 50 Inch-Pounds	
Materials Required		
Specification or Part Number	Nomenclature	
MS20995NC20	Lockwire	
NOTE		
Countermeasures Set High Band Antenna Circuit, Figure 1, must be used with this procedure.		
Use table 7 for waveguide replacement reference.		
For locator, see WP024 00.		
Malfunction is caused by one of the below:		
Aft AN/ALQ-126 Antenna Waveguide Segments 1 through 12		
ALQ-126 High Band Coax Cable TE27 - F/A-18A		
ALQ-126 High Band Coax Cable TE44 - F/A-18B		
High Band Coupler CU-2243/A		
Procedure	No	Yes
a. Do the substeps below:		
(1) Open door 13R (A1-F18AC-LMM-010).		
(2) Remove lockwire from 64P-F004B and disconnect from High Band Coupler CU-2243/A.		
(3) Do Fault Location (WP020 00):		
On F/A-18A, ALQ-126 High Band Coax Cable TE27 (unit under test)		
On F/A-18B, ALQ-126 High Band Coax Cable TE44 (unit under test)		
(4) Does unit under test indicate a fault? .....	b	d
b. Do the substeps below:		
(1) Remove High Band Coupler CU-2243/A (A1-F18AC-760-300, WP019 00).		

**Table 4. Connection No. 1 Result Out of Tolerance (Continued)**

Procedure	No	Yes
(2) Do Fault Location (WP020 00) on Aft AN/ALQ-126 Antenna Waveguide Segments 1 through 12. Use figure 1 for length.		
(3) Does unit under test indicate a fault? .....	c	e
c. Replace High Band Coupler CU-2243/A (A1-F18AC-760-300, WP019 00). Do step f. ....	-	-
d. When distance to fault includes coax connectors 64P-E001S or 64P-F004B, inspect connector for damage and replace connector if necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not include coax connector, replace:		
On F/A-18A, ALQ-126 High Band Coax Cable TE27 (A1-F18AC-760-300, WP034 00). Do step f. ....	-	-
On F/A-18B, ALQ-126 High Band Coax Cable TE44 (A1-F18AC-760-300, WP035 00). Do step f. ....	-	-
e. Visually inspect waveguide segment(s) indicated by distance to fault and replace as necessary. (Use table 7 for access and replacement reference.) Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 64P-F004B (torque to 20 to 26 inch-pounds and safety with lockwire)		
(2) High Band Coupler CU-2243/A		
(3) Aft AN/ALQ-126 Antenna Waveguide (Use table 7 for installation reference)		
(4) Close door 13R .....	-	-

**Table 5. Connection No. 2 Result Out of Tolerance**

Support Equipment Required	
Part Number or Type Designation	Nomenclature
AN/USM-402A(V)1	Swept Frequency Measurement Test Set
Materials Required	
None	
NOTE	
Countermeasures Set High Band Antenna Circuit, Figure 1, must be used with this procedure.	
For locator, see WP024 00.	
Use table 7 for waveguide replacement reference.	

**Table 5. Connection No. 2 Result Out of Tolerance (Continued)**

Malfunction is caused by one of the below:		
Adapters Forward Waveguide Segments 1 through 6, 8 and 9 High Band Coupler CU-2243/A RF Coaxial Cable Assembly		
Procedure	No	Yes
a. Do the substeps below:		
(1) Open door 13R (A1-F18AC-LMM-010).		
(2) Remove High Band Coupler CU-2243/A (A1-F18AC-760-300, WP019 00).		
(3) Do Fault Location (WP020 00) on AN/ALQ-126 Forward Antenna Waveguide run (unit under test).		
(4) Does unit under test indicate a fault? .....	b	c
b. Replace High Band Coupler CU-2243/A (A1-F18AC-760-200, WP019 00) .....	-	-
c. Visually inspect AN/ALQ-126 forward waveguide run segment(s) indicated by distance to fault, and replace as necessary. (Use table 7 for access and replacement reference). When distance to fault includes coax connector 64P-B020, inspect connector for damage and replace as necessary (A1-F18AC-WRM-000, WP137 00) .....	-	-
d. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) Close door 13R		
(2) Install High Band Coupler CU-2243/A .....	-	-

**Table 6. Connection No. 3 Result Out of Tolerance**

Support Equipment Required	
Part Number or Type Designation	Nomenclature
AN/USM-402A(V)1	Swept Frequency Measurement Test Set
—	Torque Wrench, 0 to 50 Inch-Pounds
Materials Required	
Specification or Part Number	Nomenclature
MS20995NC20	Lockwire

**Table 6. Connection No. 3 Result Out of Tolerance (Continued)**

NOTE		
Countermeasures Set High Band Antenna Circuit, Figure 1, must be used with this procedure.		
For locator, see WP024 00.		
Malfunction is caused by one of the listed below:		
ALQ-126 High Band Coax Cable TE26 - F/A-18A		
ALQ-126 High Band Coax Cable TE34 - F/A-18A		
ALQ-126 High Band Coax Cable TE42 - F/A-18B		
ALQ-126 High Band Coax Cable TE43 - F/A-18B		
Low Band Coupler CU-2243/A		
High Band Suppression Filter F-1471/ALQ-126		
Procedure	No	Yes
a. Do the substeps below:		
(1) Open door 13R (A1-F18AC-LMM-010).		
(2) Remove lockwire from 64P-F004A and disconnect from High Band Coupler CU-2243/A.		
(3) Do Fault Location (WP020 00) (unit under test) on 64P-F004A to 64P-E001R. Use figure 1 for WRA length.		
(4) Does unit under test indicate a fault? .....	b	c
b. Replace High Band Coupler CU-2243/A (A1-F18AC-760-300, WP019 00) .....	-	-
c. When distance to fault includes a coax connector 64P-E004A, 64P-E001R, 64P-010A or 63P-E010B, inspect connector of interest and replace as necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not include a coax connector, replace fault WRA indicated by fault location procedure. Use figure 1 for length .....	-	-
d. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) Close door 13R		
(2) Connect 64P-F004A (torque to 20 to 26 inch-pounds and safety with lockwire) .....	-	-

Table 7. Replacement Procedure Reference












Nomenclature	Ref Des	Access	Replacement WP (A1-F18AC-760-300)
Adapter	64W-B521	—	WP032 00
Adapter	64W-B523	—	WP032 00
Aft AN/ALQ-126 Antenna Waveguide			
Segment 1 	64W-F510	Door 13R	WP022 00
	64W-F510	Door 13R	WP023 00
Segment 2 	64W-K511	Door 13R/Cockpit	WP022 00
	64W-K511	Door 13R/Cockpit	WP023 00
Segment 3 	64W-K512	Cockpit	WP022 00
	64W-K526	Cockpit	WP024 00
Segment 4 	64W-P513	Cockpit/Door 18	WP025 00
	64W-K525	Cockpit	WP024 00
Segment 5	64W-P514	Door 26	WP026 00
		Door 31	
		Door 40	
		Door 43	
Segment 6	64W-P515	Door 43	WP026 00
		Door 49	
		Door 62	
Segment 7	64W-S516	Door 62	WP027 00
		Door 63L	
Segment 8 64W-S517	64W-S517	Door 63L	WP027 00
		Door 75L	
Segment 9 64W-S518	64W-S518	Door 75L	WP027 00
		Door 88L	
Segment 10 	64W-S519	Door 88L	WP028 00
		Stabilizer Section- Vertical Tip	
Segment 11 	64W-S520	Door 122	WP028 00
		Stabilizer Section- Vertical Tip	
Segment 10/11 	64W-S544	Door 88L and Door 122	WP028 00
		Stabilizer Section- Vertical Tip	
Segment 12	64W-S521	Door 122	WP028 00
		Stabilizer Section- Vertical Tip	
Aft High Band Antenna AS-3421/ ALQ-126	64E-S018	—	WP011 00
AN/ALQ-126 High Band Coax Cable			
TE26	64W-E536	—	WP034 00
TE27	64W-E535	—	WP034 00
TE34	64W-E537	—	WP034 00
TE42	64W-E536	—	WP035 00
TE43	64W-E537	—	WP035 00
TE44	64W-E535	—	WP035 00

Table 7. Replacement Procedure Reference (Continued)

Nomenclature	Ref Des	Access	Replacement WP (A1-F18AC-760-300)
Forward AN/ALQ-126 Antenna Waveguide			
Segment 1	64W-D509	Door 13R	WP029 00
Segment 2	64W-D508	Door 13R	WP029 00
		Door 10R	
Segment 3	64W-D507	Door 10R	WP030 00
Segment 4	64W-D506	Door 10R	WP030 00
Segment 5	64W-D505	Door 10R	WP031 00
		Door 3	
Segment 6	64W-B504	Door 3	WP031 00
Segment 7	64W-B503	Door 3	WP032 00
Segment 8	64W-B502	Door 3	WP033 00
Segment 9	64W-B501	Door 3	WP033 00
Forward High Band Antenna AS-3385/ ALQ-126	64E-BO1T	—	WP012 00
High Band Coupler CU-2243/A	64DCF004	—	WP019 00
High Band Suppression Filter F-1471/ ALQ-126	64FLE010	—	WP020 00
<b>LEGEND</b>			
<div>1 F/A-18A.</div> <div>2 F/A-18B.</div> <div>3 Aft AN/ALQ-126 Antenna Waveguide Segment 10/11 is an alternate installation.</div>			



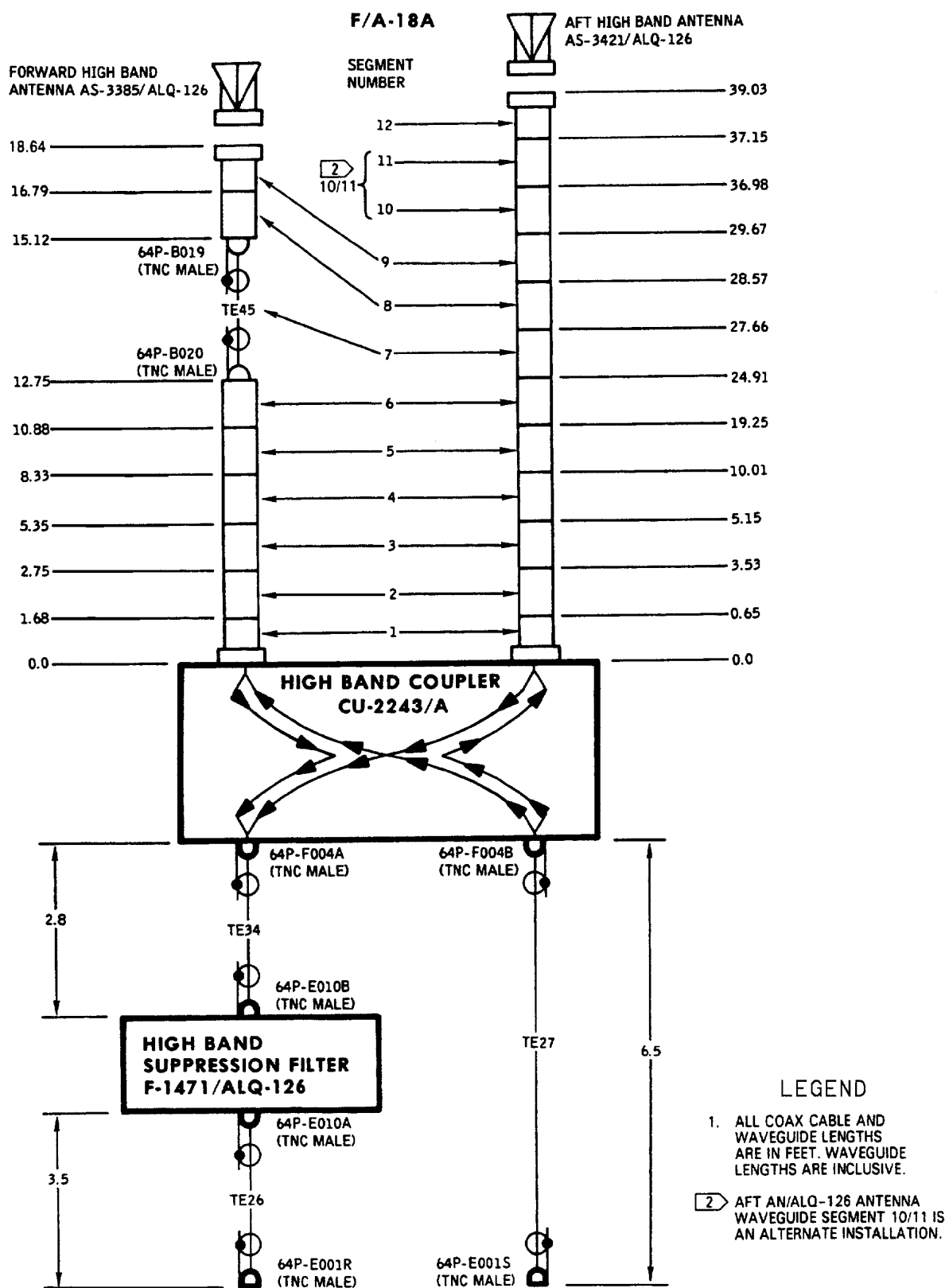


Figure 1. Countermeasures Set High Band Antenna Circuit (Sheet 1)

02300101

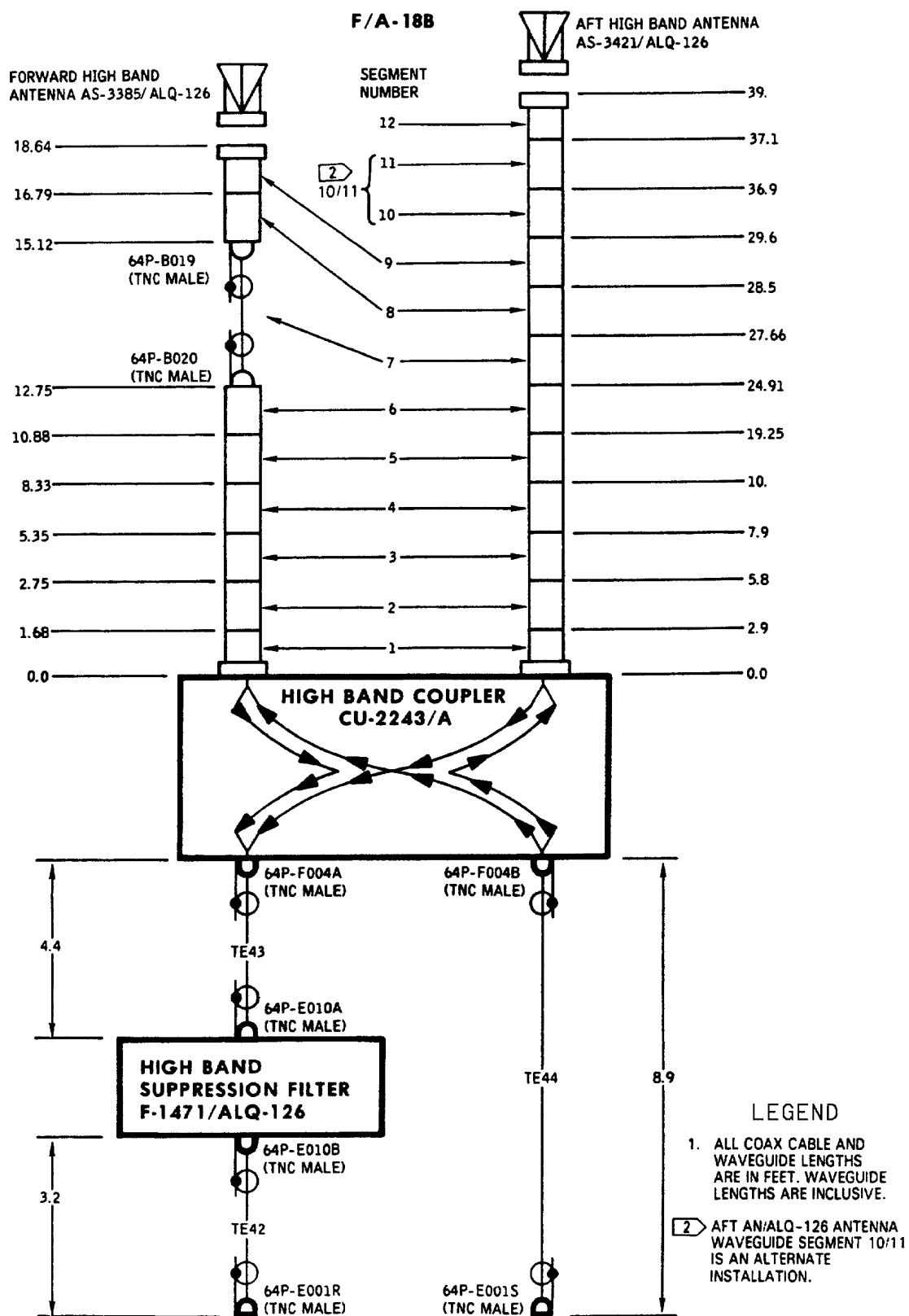


Figure 1. Countermeasures Set High Band Antenna Circuit (Sheet 2)

02300102

---

ORGANIZATIONAL MAINTENANCE  
TESTING AND TROUBLESHOOTING  
LOCATOR - ANTENNA SYSTEM  
COUNTERMEASURES SET

---

## Reference Material

None

## Alphabetical Index

Subject	Page No.
Antenna System Locator, Countermeasures Set, Figure 1 .....	2

## Record of Applicable Technical Directives

None

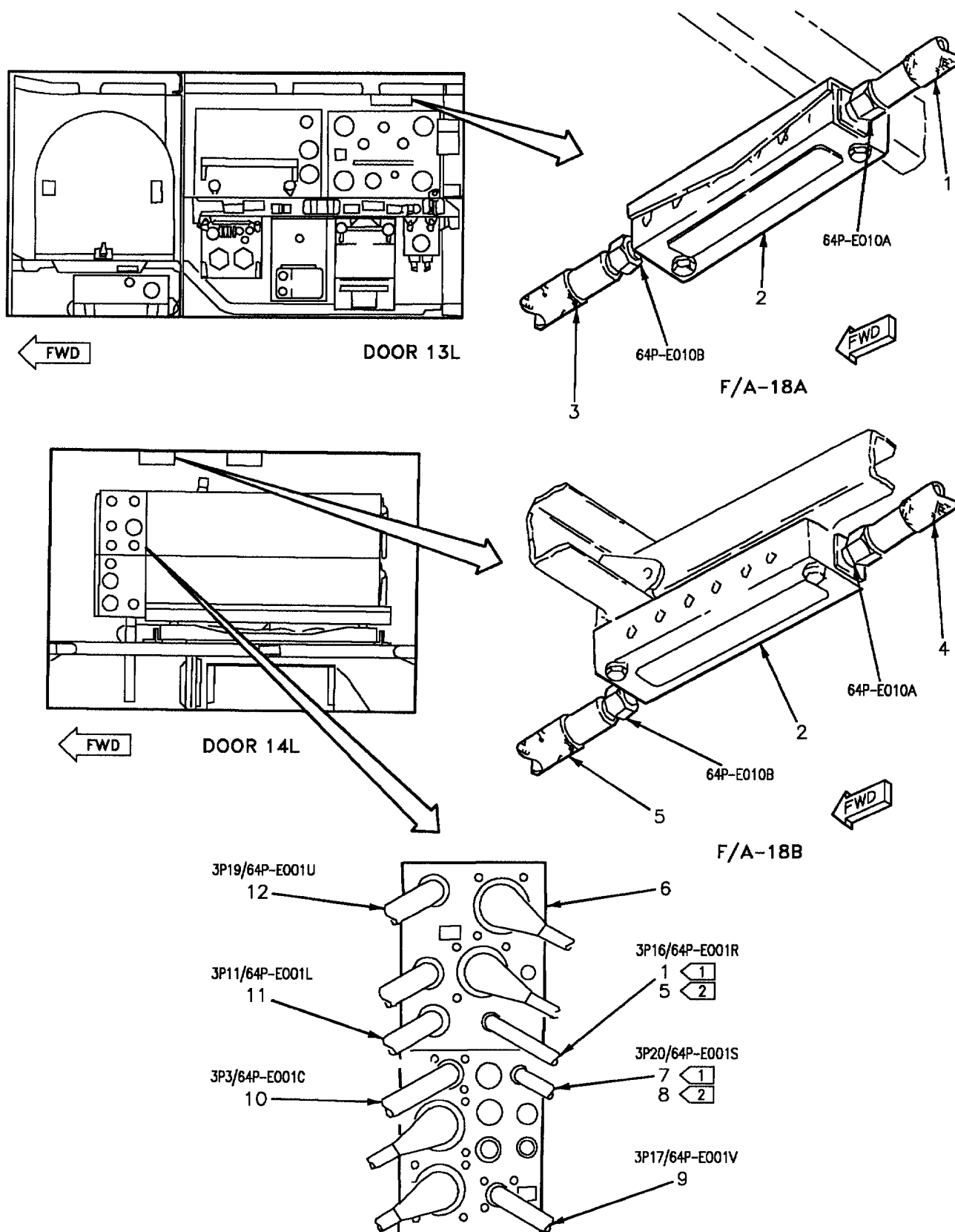


Figure 1. Antenna System Locator, Countermeasures Set (Sheet 1)

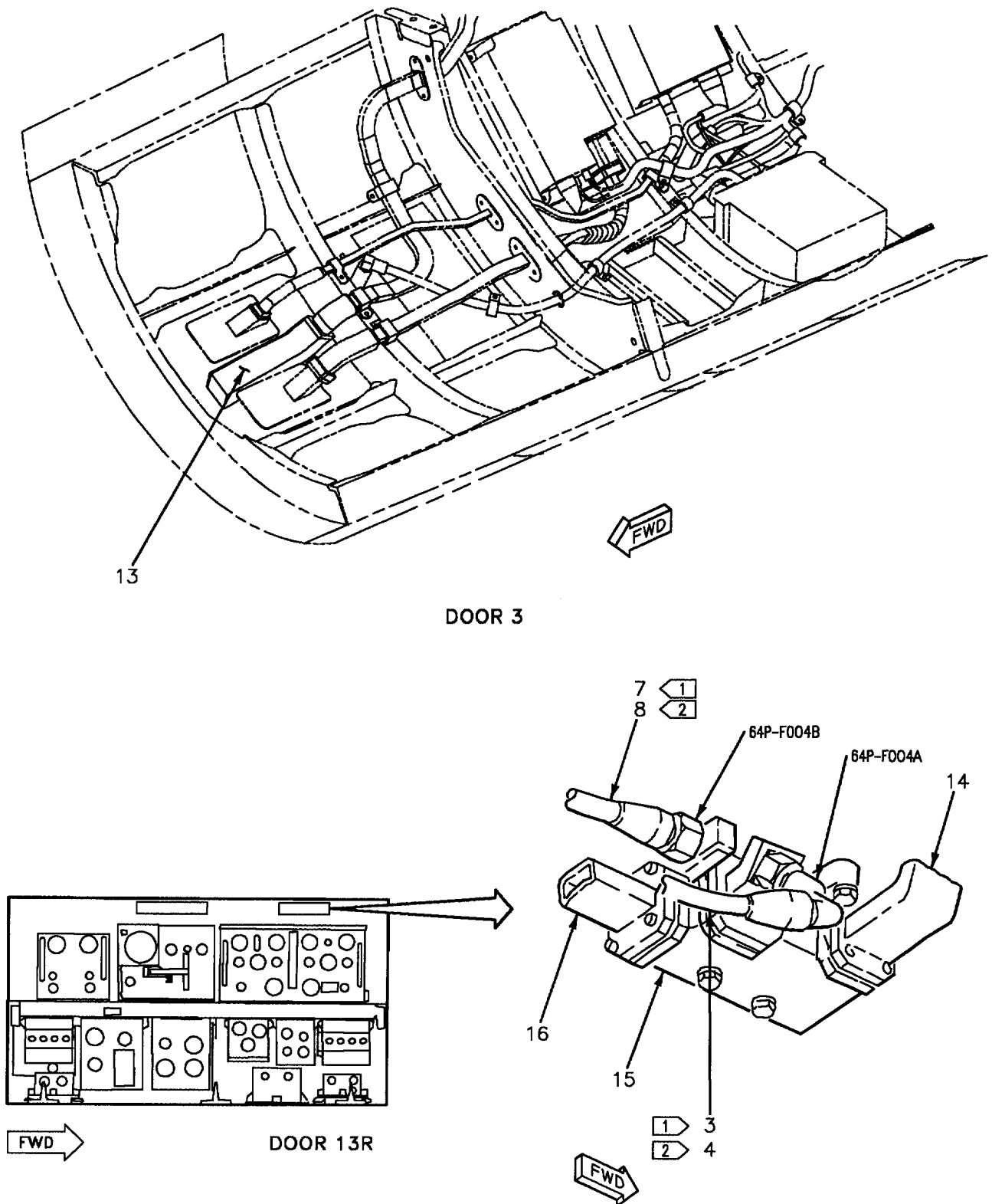


Figure 1. Antenna System Locator, Countermeasures Set (Sheet 2)

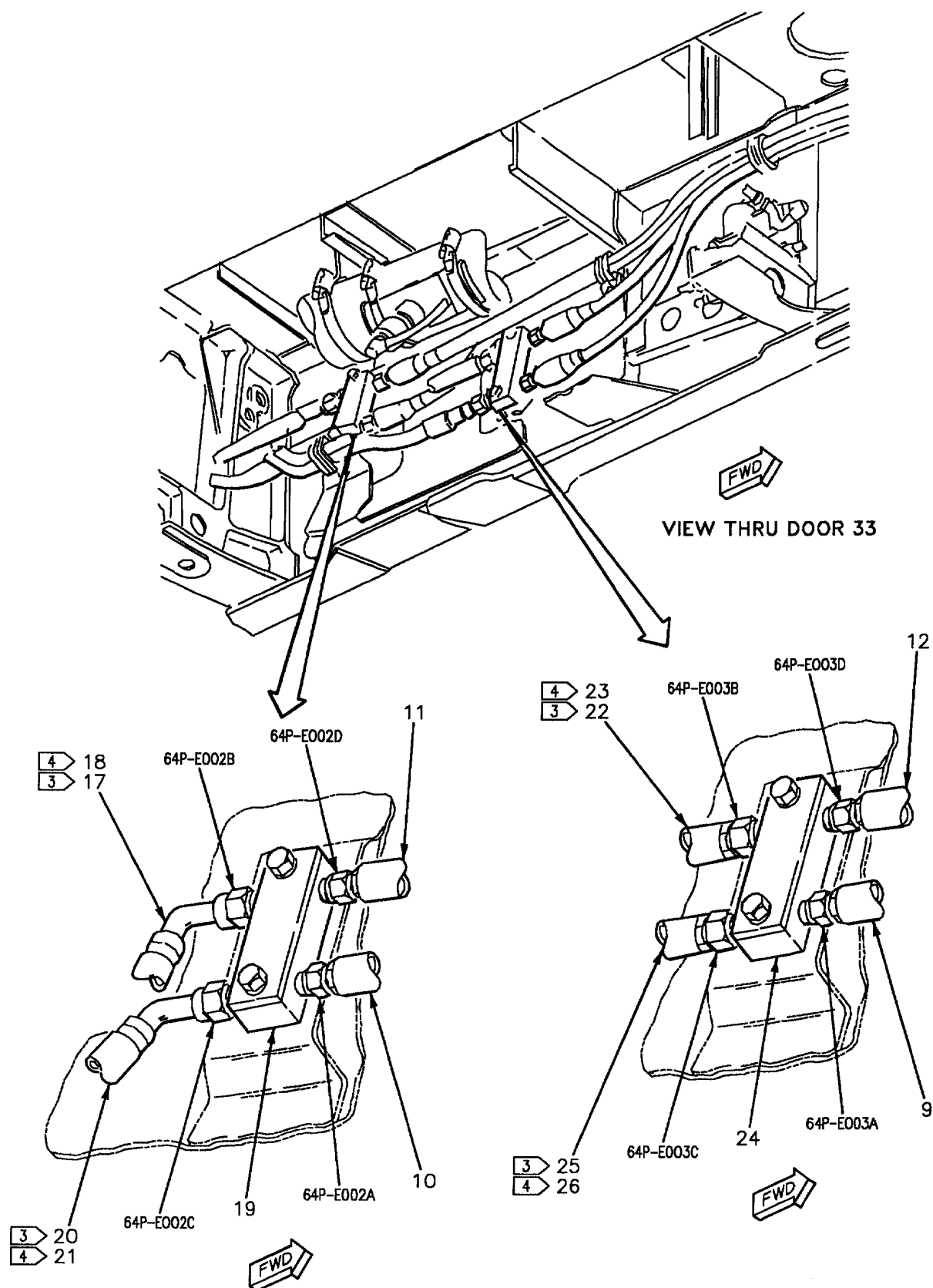


Figure 1. Antenna System Locator, Countermeasures Set (Sheet 3)

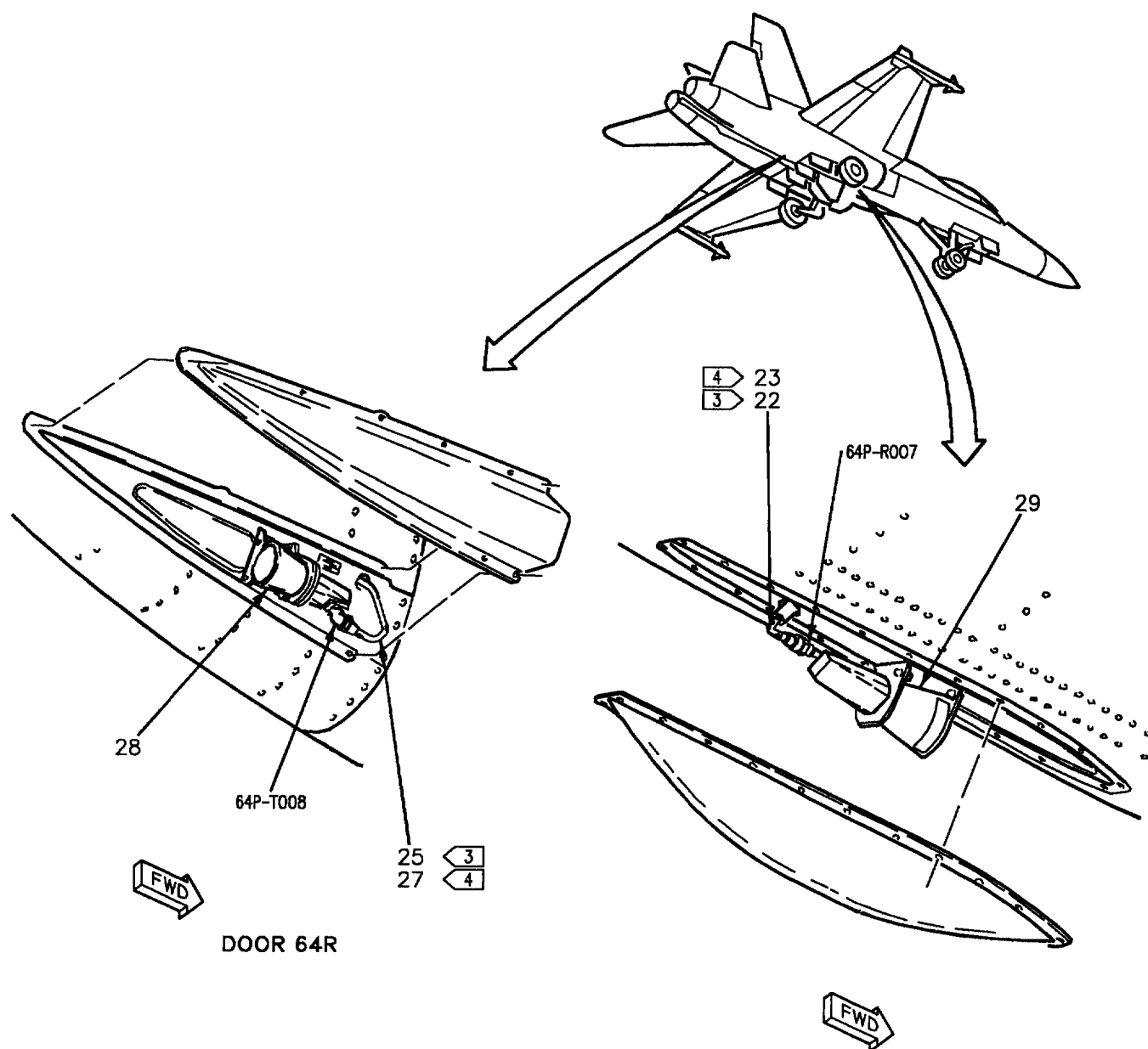


Figure 1. Antenna System Locator, Countermeasures Set (Sheet 4)

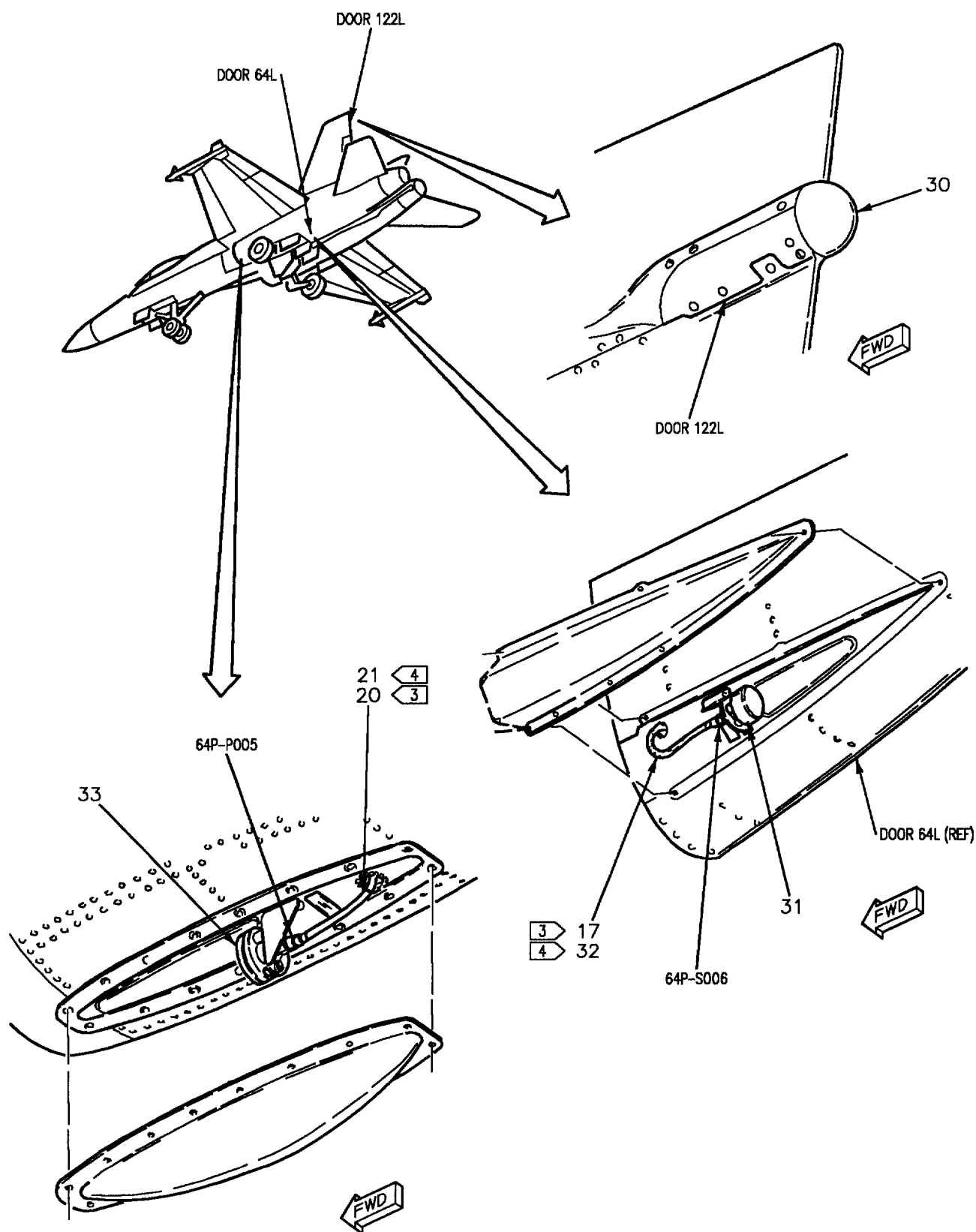


Figure 1. Antenna System Locator, Countermeasures Set (Sheet 5)



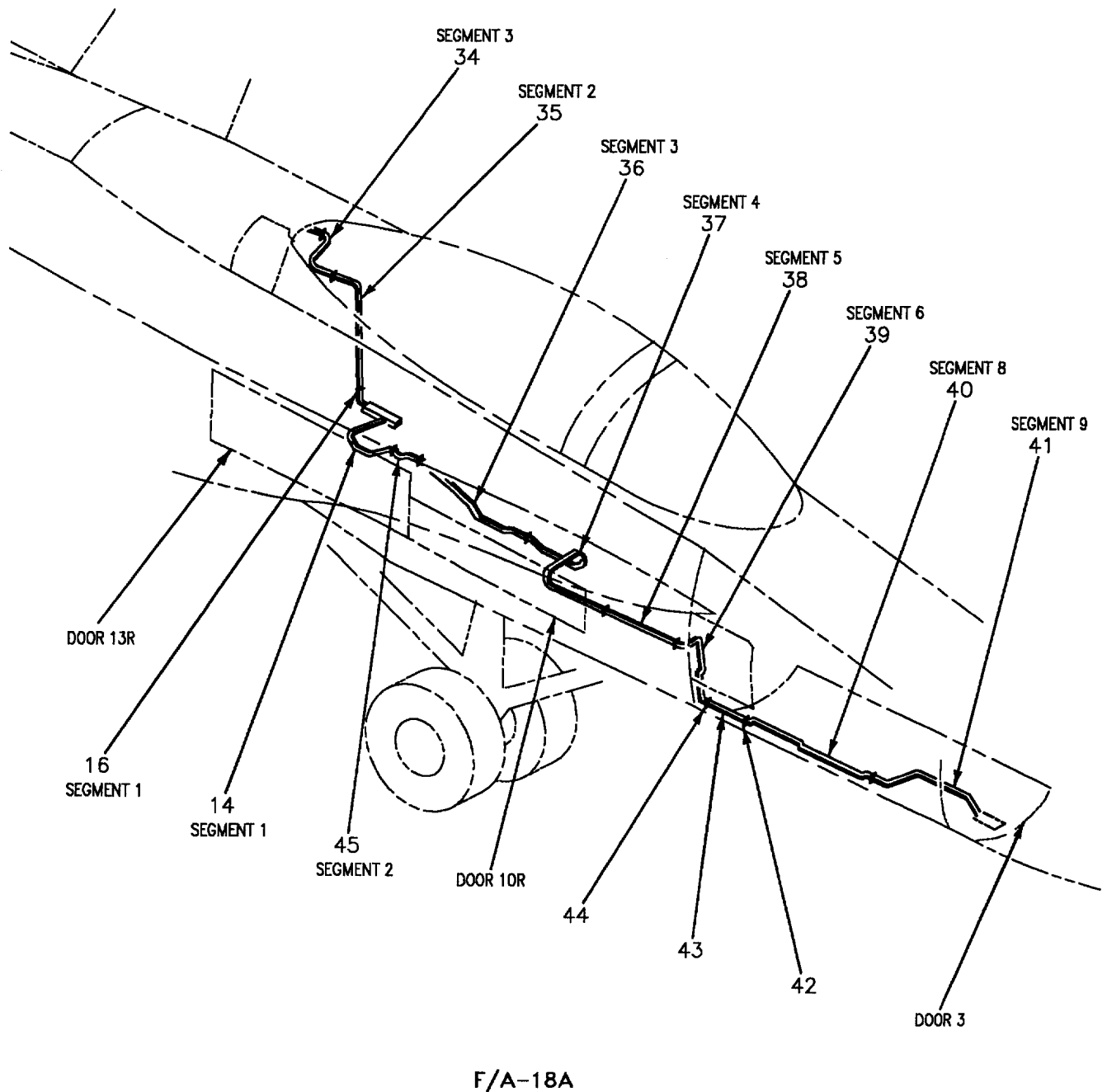
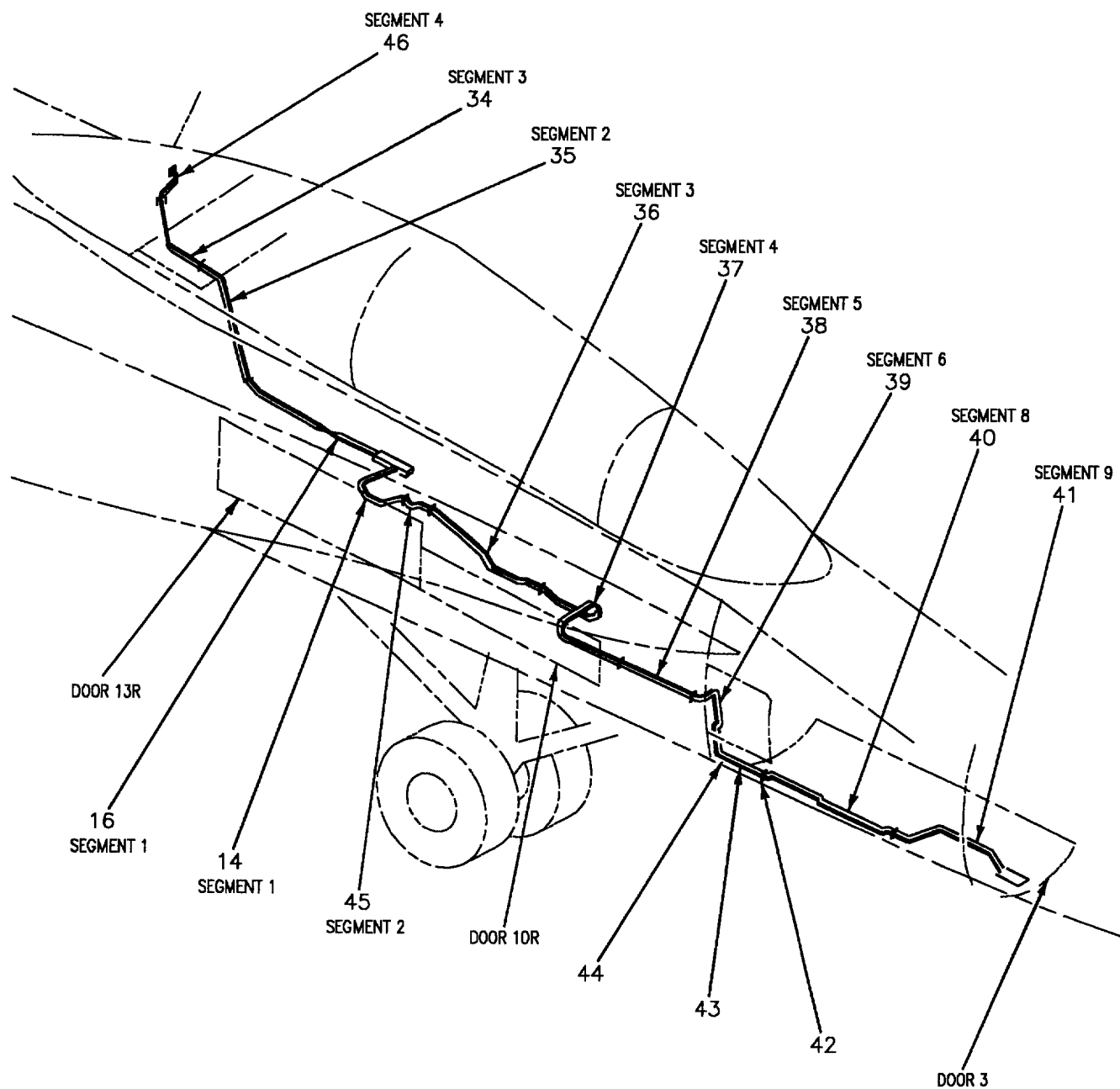


Figure 1. Antenna System Locator, Countermeasures Set (Sheet 6)



F/A-18B

Figure 1. Antenna System Locator, Countermeasures Set (Sheet 7)

02400107

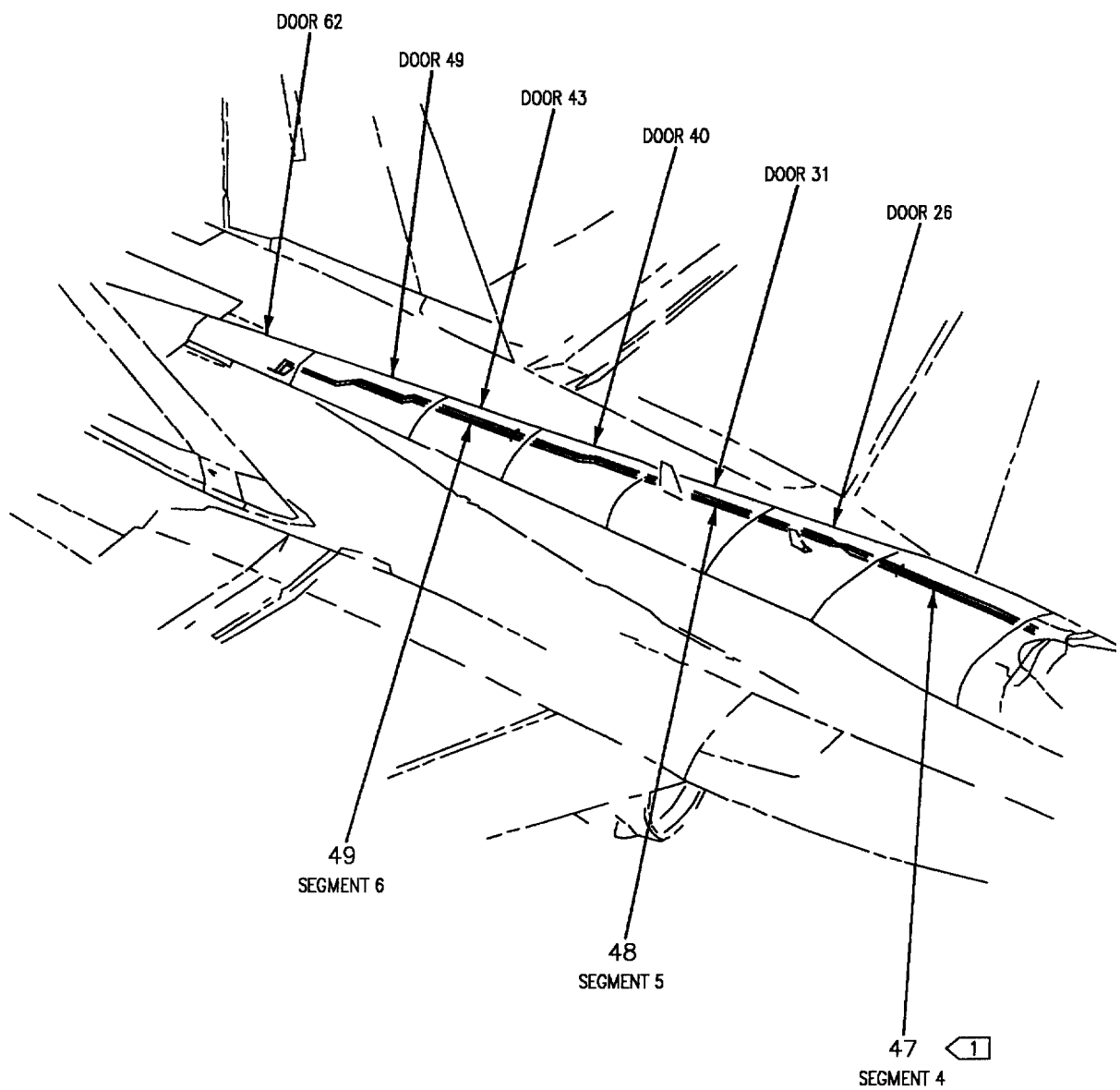


Figure 1. Antenna System Locator, Countermeasures Set (Sheet 8)

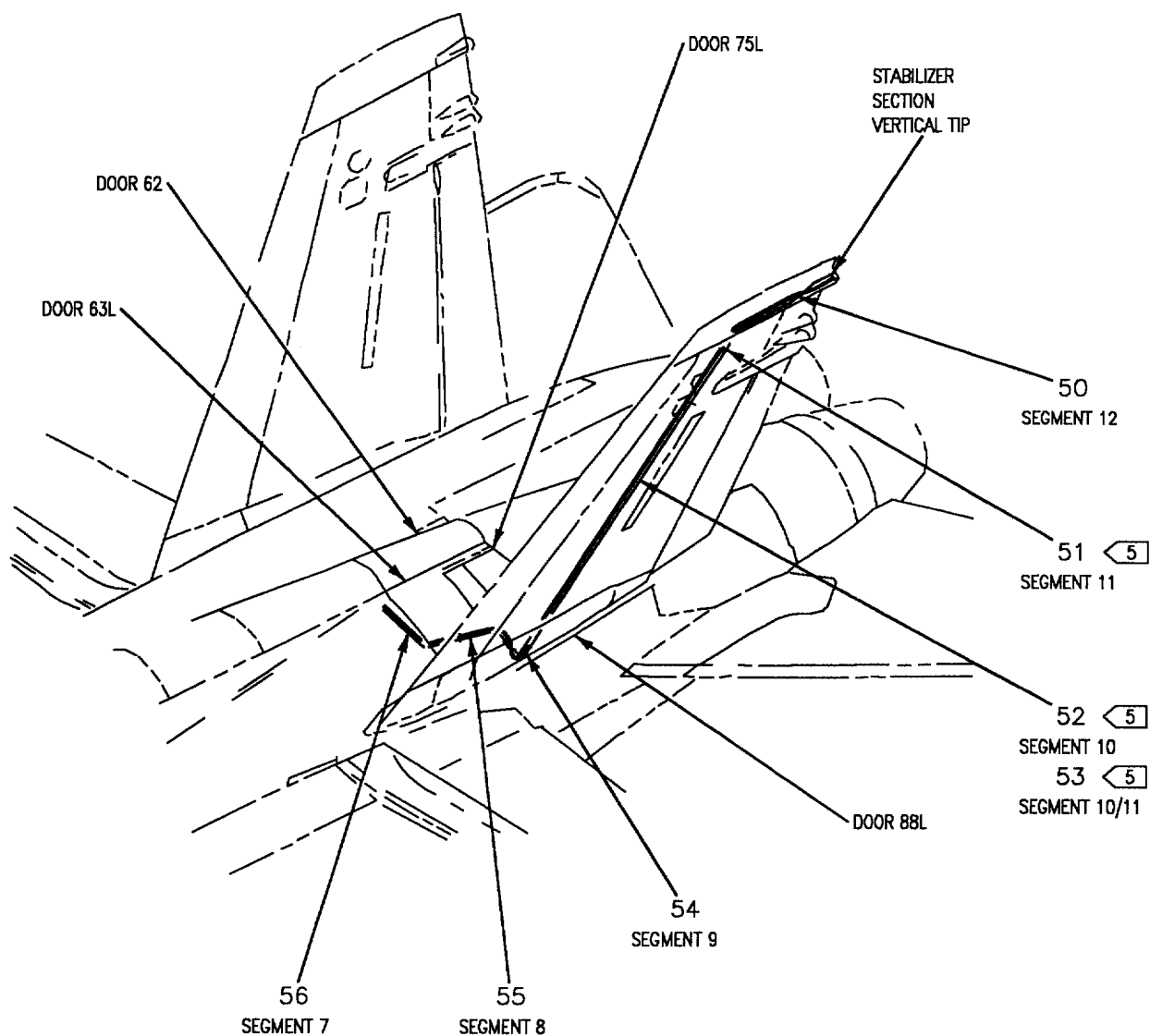


Figure 1. Antenna System Locator, Countermeasures Set (Sheet 9)














Nomenclature	Index No.	Ref Des
ADAPTER	42	64W-B522
ADAPTER	44	64W-B523
AFT AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 1	16	64W-F510
AFT AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 2	35	64W-K511
AFT AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 3	34	64W-K512  1
AFT AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 3	34	64W-K526  2
AFT AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 4	47	64W-P513  1
AFT AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 4	46	64W-K525  2
AFT AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 5	48	64W-P514
AFT AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 6	49	64W-P515
AFT AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 7	56	64W-P516
AFT AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 8	55	64W-P517
AFT AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 9	54	64W-S518
AFT AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 10	52	64W-S519  5
AFT AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 10/11	53	64W-S544  5
AFT AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 11	51	64W-S520  5
AFT AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 12	50	64W-S521
AFT HIGH BAND ANTENNA AS-3421/ALQ-126	30	64E-S018
AFT LOW BAND ANTENNA AS-3418/ALQ-126	31	64E-S006
AFT MID BAND ANTENNA AS-3419/ALQ-126	28	64E-T008
ALQ-126 HIGH BAND COAX CABLE TE26	1	64W-E536  1
ALQ-126 HIGH BAND COAX CABLE TE27	7	64W-E535  1
ALQ-126 HIGH BAND COAX CABLE TE34	3	64W-E537  1
ALQ-126 HIGH BAND COAX CABLE TE42	5	64W-E536  2
ALQ-126 HIGH BAND COAX CABLE TE43	4	64W-E537  2
ALQ-126 HIGH BAND COAX CABLE TE44	8	64W-E535  2

Figure 1. Antenna System Locator, Countermeasures Set (Sheet 10)











Nomenclature	Index No.	Ref Des
ALQ-126 LOW BAND COAX CABLE TE17	10	64W-E527
ALQ-126 LOW BAND COAX CABLE TE22	11	64W-E528
ALQ-126 LOW BAND COAX CABLE TE30	20	64W-P529  3
ALQ-126 LOW BAND COAX CABLE TE30A	21	64W-P529  4
ALQ-126 LOW BAND COAX CABLE TE31	17	64W-P530  3
ALQ-126 LOW BAND COAX CABLE TE31A	18	64W-P530  4
ALQ-126 LOW BAND COAX CABLE TE31B	32	64W-S538  4
ALQ-126 MID BAND COAX CABLE TE28	12	64W-E531
ALQ-126 MID BAND COAX CABLE TE29	9	64W-E532
ALQ-126 MID BAND COAX CABLE TE32	22	64W-P533  3
ALQ-126 MID BAND COAX CABLE TE32A	23	64W-P533  4
ALQ-126 MID BAND COAX CABLE TE33	25	64W-P534  3
ALQ-126 MID BAND COAX CABLE TE33A	26	64W-P534  4
ALQ-126 MID BAND COAX CABLE TE33B	27	64W-T539  4
FORWARD AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 1	14	64W-F509
FORWARD AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 2	45	64W-D508
FORWARD AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 3	36	64W-D507
FORWARD AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 4	37	64W-D506
FORWARD AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 5	38	64W-D505
FORWARD AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 6	39	64W-B504
FORWARD AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 8	40	64W-B502
FORWARD AN/ALQ-126 ANTENNA WAVEGUIDE SEGMENT 9	41	64W-B501
FORWARD HIGH BAND ANTENNA AS-3385/ALQ-126	13	64E-B017
FORWARD LOW BAND ANTENNA AS-3418/ALQ-126	33	64E-P005
FORWARD MID BAND ANTENNA AS-3420/ALQ-126	29	64E-R007
HIGH BAND COUPLER CU-2243/A	15	64DCF004

Figure 1. Antenna System Locator, Countermeasures Set (Sheet 11)

Nomenclature	Index No.	Ref Des
HIGH BAND SUPPRESSION FILTER F-1471/ALQ-126	2	64FLE010
LOW BAND COUPLER CU-2264/A	19	64DCE002
LOW BAND COUPLER CU-2264/A	24	64DCE003
RECEIVER-TRANSMITTER RT-1079( )/ALQ-126	6	64A-E001
RF COAX CABLE ASSEMBLY	43	64W-B503

**LEGEND**

- 1 F/A-18A.
- 2 F/A-18B.
- 3 161353 thru 161705, 161707
- 4 161706, 161708 and up.
- 5 Aft AN/ALQ-126 Antenna Waveguide Segment 10/11 is an alternate installation.

**Figure 1. Antenna System Locator, Countermeasures Set (Sheet 12)**

**THIS PAGE INTENTIONALLY LEFT BLANK.**



---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TESTING - FUNCTIONAL TEST**  
**COUNTERMEASURES SET**

---

**Reference Material**

Line Maintenance Procedures ..... A1-F18AC-LMM-000  
Electronic Equipment AN/USM-406(V) Test Set ..... NAVAIR 16-3OUSM406-1.2

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Antenna Coupler Installation, Figure 1 .....	8
Common Procedures .....	3
High Band Test Hookup, Figure 3 .....	14
Illustrated Parts Breakdown .....	3
Introduction .....	2
Low Band and Mid Band Test Hookup, Figure 2 .....	13
Operating Warnings and Cautions .....	2
Operator Entries and Displays .....	2
Table 1. Initial Setup .....	3
Table 2. Antenna Coupler Installation .....	4
Table 3. Shutdown .....	6
Table 4. Antenna Coupler Removal .....	7
Test Description .....	2
Lines and Antenna Sweep Test (T3A) .....	2
Narrow Band Power Test (T4) .....	2
Receiver Sensitivity/Snapdown Test (T5) .....	2
System Sweep Test (T3) .....	2
Techniques Test (T1) .....	2

**Record of Applicable Technical Directives**

None

## 1. INTRODUCTION.

2. This work package contains:
  - a. test description
  - b. operating WARNINGS AND CAUTIONS
  - c. operator entries and displays
  - d. common procedures

## 3. TEST DESCRIPTION.

4. The AN/USM-406A(V) Functional Test consists of five separate tests. The tests to be done are determined by one of three sources:

- a. Daily/Special/Preservation Maintenance Requirement cards (A1-F18AC-MRC-200)
- b. Fault Reporting Manual (A1-F18AC-FRM-000)
- c. Tactical Electronic Warfare Systems (A1-F18AC-760-300)

5. **TECHNIQUES TEST (T1), WP026 00.** The countermeasures test set (test set) simulates typical radar threat parameters and applies them to the Receiver-Transmitter RT-1079( )/ALQ-126 (AN/ALQ-126). The test set evaluates the AN/ALQ-126 response for minimum performance standards stored in the test set.

6. **SYSTEM SWEEP TEST (T3), WP027 00.** The test set does a wide band system power measurement of the AN/ALQ-126 over its full frequency range. The test set stimulates the AN/ALQ-126 system and measures output power and compares the measurements to stored band limits.

7. **LINES AND ANTENNA SWEEP TEST (T3A), WP028 00.** The test set does a normalized automatic sweep of aircraft antennas, lines, and couplers with sweep range equal to selected band limits.

8. **NARROW BAND POWER TEST (T4), WP029 00.** The test set makes a comparison between the AN/ALQ-126 wide band power and narrow band power. The test set contains a YIG filter, which is used to make this measurement. The purpose is to test the AN/ALQ-126 loop traveling wave tube to detect degeneration of the signal into wide band noise.

9. **RECEIVER SENSITIVITY/SNAPDOWN TEST (T5), WP030 00.** The test set increases rf power to the AN/ALQ-126 until it responds and calculates the AN/ALQ-126 receiver sensitivity. The test set output power then decreases until the ALQ-126 no longer responds. The test set then calculates snapdown sensitivity.

## 10. OPERATING WARNINGS AND CAUTIONS.

### WARNING

Testing AN/ALQ-126 with transmit output unterminated will cause personnel to be exposed to hazardous radiation while AN/ALQ-126 is transmitting.

### CAUTION

Connecting the AN/ALQ-126 to the test set without required attenuators will cause damage to the test set.

Do not connect antenna coupler output XMT to its input RCV during testing. Damage to AN/ALQ-126 will result.

Operation of this equipment will cause radiation in excess of emission control (EMCON) limits. Tests should not be done under EMCON conditions.

Do not disconnect test set INTERFACE termination with primary power on, test set program will be lost.

To prevent damage to AN/ALQ-126 and test set cable assemblies, do not bend cable assemblies tighter than a 2 inch radius.

## 11. OPERATOR ENTRIES AND DISPLAYS.

12. All operator entries are made by using the test set keyboard, and are displayed on test set for operator verification. If entry displayed is correct, it is entered by pressing the ENT switch. If entry displayed is incorrect, it is cleared by pressing the ESC switch. The ESC switch is also used to stop a test in progress.

13. The test set entry format for test selection and options is as below:

(T)(N)	No Options
(T)(N)(O <sub>1</sub> )(O <sub>2</sub> )	1 or 2 Options

(T) Enter letter T  
 (N) Enter desired test number (i.e., 1, 3, 4 or 5)  
 (O) Enter test option code. Test options are contained in their applicable test work packages

14. During testing, the test set provides prompts to the operator (TEST????, ANT????, ATTN????, LINE????...). These prompts will always be followed by four question marks. The test set, when displaying prompts is asking the operator to enter specific information used to initiate or evaluate the test.

#### NOTE

Proximity to a high-power transmitter, such as another aircraft being ground tested or radar system on a nearby ship can cause random test failures.

15. At the end of any test when a TEST NOGO is displayed, press ENT switch for failure message. An additional failure message will be displayed each time

ENT switch is pressed. When all failure messages have been displayed, TEST???? is displayed.

#### 16. COMMON PROCEDURES.

17. Common procedures for using the AN/USM-406A(V) test set are listed below:

- a. Initial Setup, Table 1
- b. Antenna Coupler Installation, Table 2
- c. Shutdown, Table 3
- d. Antenna Coupler Removal, Table 4
- e. Low Band and Mid Band Test Hookup, Figure 2
- f. High Band Test Hookup, Figure 3

#### 18. ILLUSTRATED PARTS BREAK-DOWN.

19. This illustrated parts breakdown has data required for identifying and ordering parts. The manual introduction has more information on IPB data.

**Table 1. Initial Setup**

Support Equipment Required	
Part Number or Type Designation	Nomenclature
3036600G1	Test Coupler Set
3048500G1	Countermeasures Test Set
Materials Required	
None	
1. PROCEDURE.	
a. Setup the countermeasures test set (test set) by doing the substeps below:	
(1) Position test set next to door 14L, and apply brake to front wheel by lifting pull handle to vertical position.	
(2) Loosen six quarter-turn fasteners and open cover. If desired, remove cover completely by sliding cover sideways to disengage hinge pins.	
(3) Set POWER switch to OFF.	
(4) Connect test set ground cable between unpainted surface of test set and earth ground.	
(5) Remove power cable from test coupler set, and connect to J1 on test set.	

Table 1. Initial Setup (Continued)

- (6) Connect other end of power cable to 115V, 60 Hz power source. If primary is 400 Hz, use adapter supplied in the test set.



Do not remove the INTERFACE connector cover while power is on. Cover provides proper termination and isolation. Removing the cover may destroy the program and calibration tables.

NOTE

Lamp above power switch functions as a night light and is on whenever ac power is connected, regardless of position of the power switch.

The test set requires approximately 15 minutes to warm-up. The display indicates STBY (standby) during the warm-up cycle and TEST???? on completion.

- (7) Open control panel sun shield and set POWER switch to ON. AC ON and DC ON lamps should light and cooling fan should run.

NOTE

POWER switch is a circuit breaker. If power is lost, reset the breaker by setting the POWER switch to OFF then back to ON.

- (8) When TEST???? is displayed, press and hold RESET button. Display indicates proper test program has been loaded in memory.
- (9) Do Self-Test (TEST 0) (NAVAIR 16-3OUSM406-1.2)
- (10) Remove probe cable assembly from test coupler set and connect P2 to J11 PROBE, on test set.
- (11) Remove external probe assembly (probe) from test set and connect 2J1 to P1 on probe cable assembly.
- (12) Remove 30 dB attenuator from test coupler set and connect to 2J2 on probe.
- (13) Remove 10 dB attenuator from test coupler set and connect to unterminated end of 30 dB attenuator.

Table 2. Antenna Coupler Installation

Support Equipment Required	
Part Number or Type Designation	Nomenclature
3036600G1	Test Coupler Set
Materials Required	
None	

**Table 2. Antenna Coupler Installation (Continued)****NOTE**

For antenna coupler installation, see figure 1.

All six antenna couplers must be installed. Couplers not connected to test set shield the receive antennas against outside signals and reduces rf radiation.

All Ball-Loks inserted into Ball-Lok fasteners must be engaged. The gap at the mating surface of aircraft and antenna coupler must be less than one quarter inch to make sure of correct installation and operation.

Ball-Loks are numbered on the coupler in the sequence of their installation. Install unnumbered Ball-Loks after the numbered Ball-Loks have been installed.

## 1. PROCEDURE.

- a. Support forward high band antenna coupler in position. Install by fully inserting Ball-Loks into Ball-Lok fasteners on aircraft (see fig 1).

**NOTE**

Forward low and mid band antenna couplers cannot be installed with engine air inlet protective covers, or engine inlet aircraft ground servicing screens installed.

- b. If installed, remove engine air inlet protective covers, or engine inlet aircraft ground servicing screens (A1-F18AC-PCM-000, WP022 00).
- c. Support forward low band antenna coupler in position. Install by fully inserting Ball-Loks into Ball-Lok fasteners on aircraft.
- d. Support forward mid band antenna coupler in position. Install by fully inserting Ball-Loks into Ball-Lok fasteners on aircraft.

**NOTE**

Aft mid and low band antenna couplers cannot be installed with AIM-7 Sparrows or Laser Detector-Tracker-Strike Camera Set AN/ASQ-173 and Detecting Set AN/AAS-38 installed.

- e. If required, remove AIM-7 Sparrows (A1-F18AC-LWS-000) or Laser Detector-Tracker-Strike Camera Set AN/ASQ-173 (A1-F18AC-743-300, WP006 00) and Detecting Set AN/AAS-38 (A1-F18AC-744-300, WP003 00).
- f. Support aft low band antenna coupler in position. Install by fully inserting Ball-Loks into Ball-Lok fasteners on aircraft.
- g. Support aft mid band antenna coupler in position. Install by fully inserting Ball-Loks into Ball-Lok fasteners on aircraft.
- h. To install aft high band antenna coupler, do the substeps below:
  - (1) Remove four sticks from test coupler set. Assemble stick assembly by fitting together.

Table 2. Antenna Coupler Installation (Continued)

- (2) Insert stick assembly into aft high band antenna coupler. Rotate counterclockwise and push until stick assembly locks into aft high band antenna coupler.



Make sure all joints of stick assembly and aft high band antenna coupler are secure. Tail surface and aft high band antenna coupler may be damaged if aft high band antenna coupler falls.

- (3) Standing forward of left horizontal stabilator, position aft high band antenna coupler over Aft High Band Antenna AS-3421/ALQ-126. Guide the coupler forward, rotate as necessary until the left vertical stabilator is completely inserted into the mating slot in the aft high band antenna coupler.
- (4) Fasten aft high band antenna coupler to Aft High Band Antenna (AS-3421/ALQ-126), by rotating stick assembly approximately 8 turns clockwise or until it stops.
- (5) Remove stick assembly by pulling until released from aft high band antenna coupler.

Table 3. Shutdown

Support Equipment Required


Part Number or Type Designation	Nomenclature
3036600G1	Test Coupler Set
3048500G1	Countermeasures Test Set

Materials Required

None

1. PROCEDURE.
- a. On ECM control panel assembly, set ECM mode switch to OFF.
  - b. Remove electrical power (A1-F18AC-LMM-000).
  - c. On countermeasures test set (test set), set POWER switch to OFF, and close control panel sun shield.
  - d. Disconnect 30 dB attenuator and 10 dB attenuator from external probe assembly (probe). Store in test coupler set.
  - e. Disconnect probe from probe cable assembly and store in test set.
  - f. Disconnect cable assemblies from test set and store in test coupler set.
  - g. Disconnect power cable and store in test coupler set. If adapter was used, disconnect and store in test set.
  - h. Remove ground cable and store in test set.
  - i. On test set, install and secure cover if removed.
  - j. Do antenna coupler removal (table 4).

**Table 4. Antenna Coupler Removal**

<b>Support Equipment Required</b>	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
3036600G1	Test Coupler Set
<b>Materials Required</b>	
None	
1. PROCEDURE.	
<div style="text-align: center;">  </div>	
<p>Make sure all joints of stick assembly and aft high band coupler are securely fastened together before removing aft high band antenna coupler. Tail surface and aft high band antenna coupler may be damaged if aft high band antenna coupler falls.</p>	
<p>a. To remove aft high band antenna coupler, do the substeps below:</p> <ol style="list-style-type: none"> <li>(1) Standing forward of left horizontal stabilator, insert stick assembly into aft high band antenna coupler. Push and turn stick assembly counterclockwise until aft high band antenna coupler and stick assembly are locked together.</li> <li>(2) Turn stick assembly fully counterclockwise. Slide aft high band antenna coupler aft and remove.</li> </ol>	
<p>b. Remove stick assembly from aft high band antenna coupler, and disassemble stick assembly. Store stick assembly and aft high band antenna coupler in test coupler set.</p>	
<p>c. Support aft low band antenna coupler, and remove four Ball-Loks from Ball-Lok fasteners. Store aft low band antenna coupler in test coupler set.</p>	
<p>d. Support aft mid band antenna coupler, and remove four Ball-Loks from Ball-Lok fasteners. Store aft mid band antenna coupler in test coupler set.</p>	
<p>e. If required, install AIM-7 Sparrow (A1-F18AC-LWS-000) or Laser Detector-Tracker-Strike Camera Set AN/ASQ-173 (A1-F18AC-743-300, WP006 00) and Detecting Set AN/AAS-38 (A1-F18AC-744-300, WP003 00).</p>	
<p>f. Support forward low band antenna coupler, and remove four Ball-Loks from Ball-Lok fasteners. Store forward low band antenna coupler in test coupler set.</p>	
<p>g. Support forward mid band antenna coupler, and remove four Ball-Loks from Ball-Lok fasteners. Store forward mid band antenna coupler in test coupler set.</p>	
<p>h. If required, install engine air inlet protective cover, or engine inlet aircraft ground service screen (A1-F18AC-PCM-000).</p>	
<p style="text-align: center;"><b>NOTE</b></p>	
<p>For proper fit of test coupler set lids, be sure alignment strips are aligned.</p>	
<p>i. Position lids on test coupler set and secure.</p>	

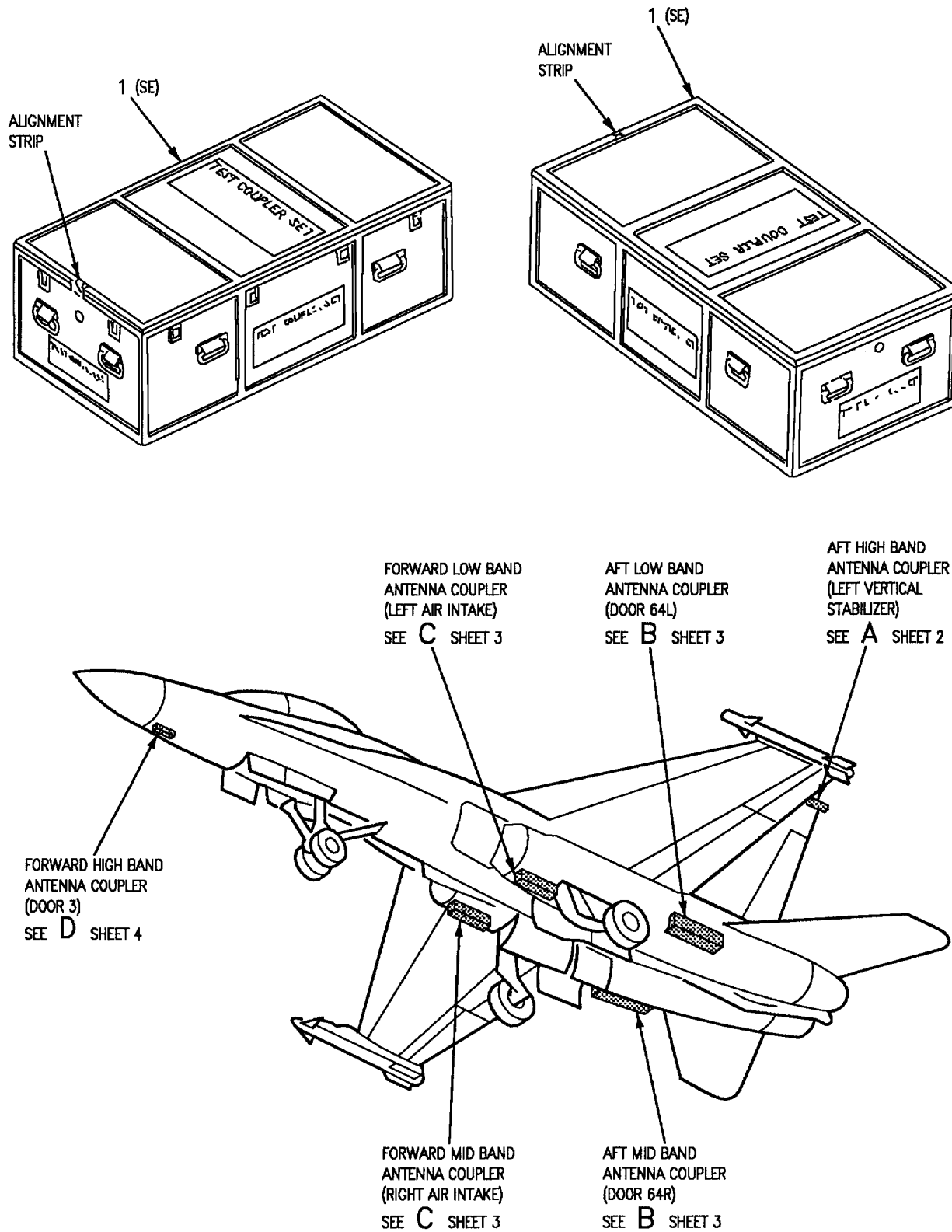
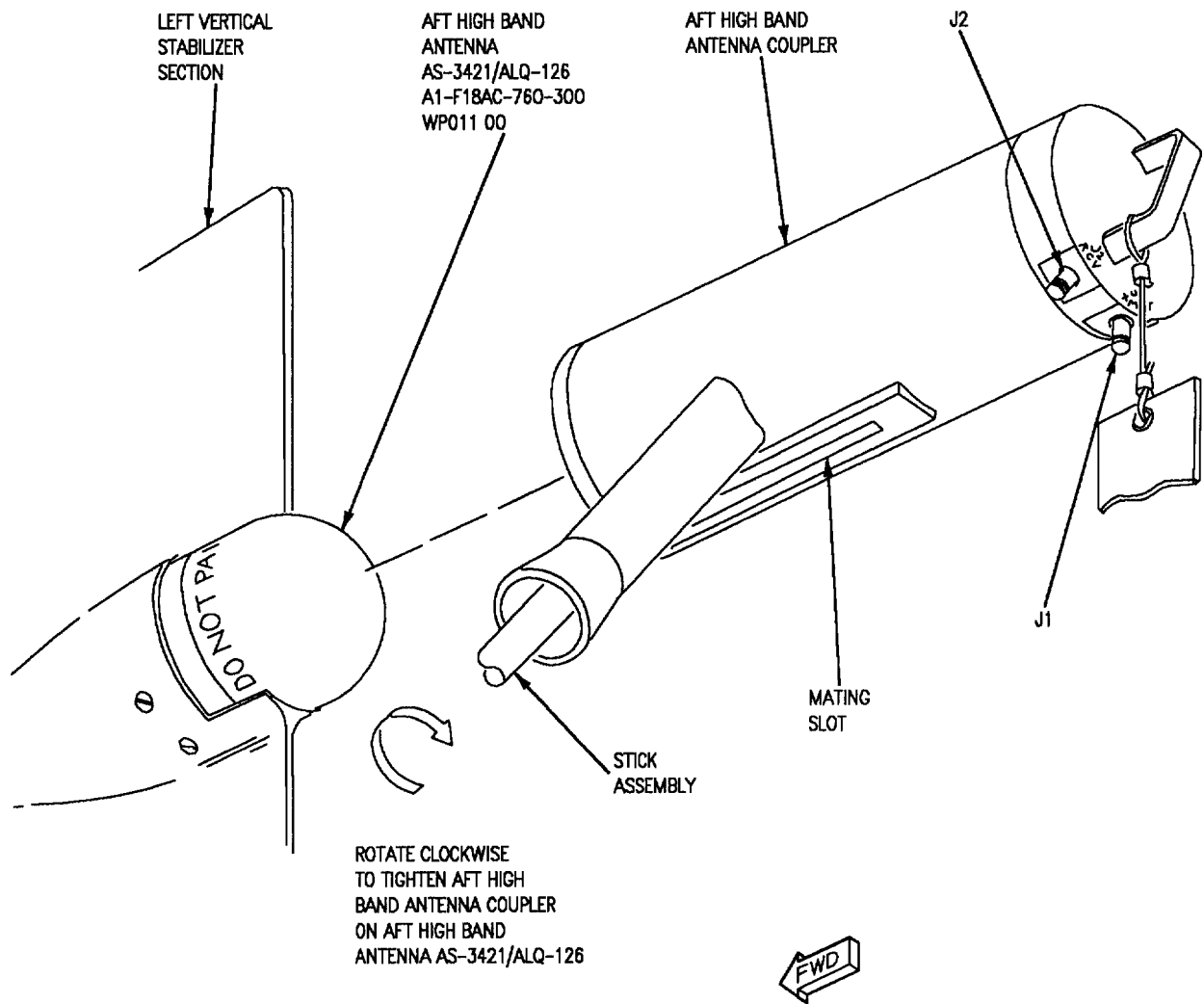


Figure 1. Antenna Coupler Installation (Sheet 1)





A

Figure 1. Antenna Coupler Installation (Sheet 2)

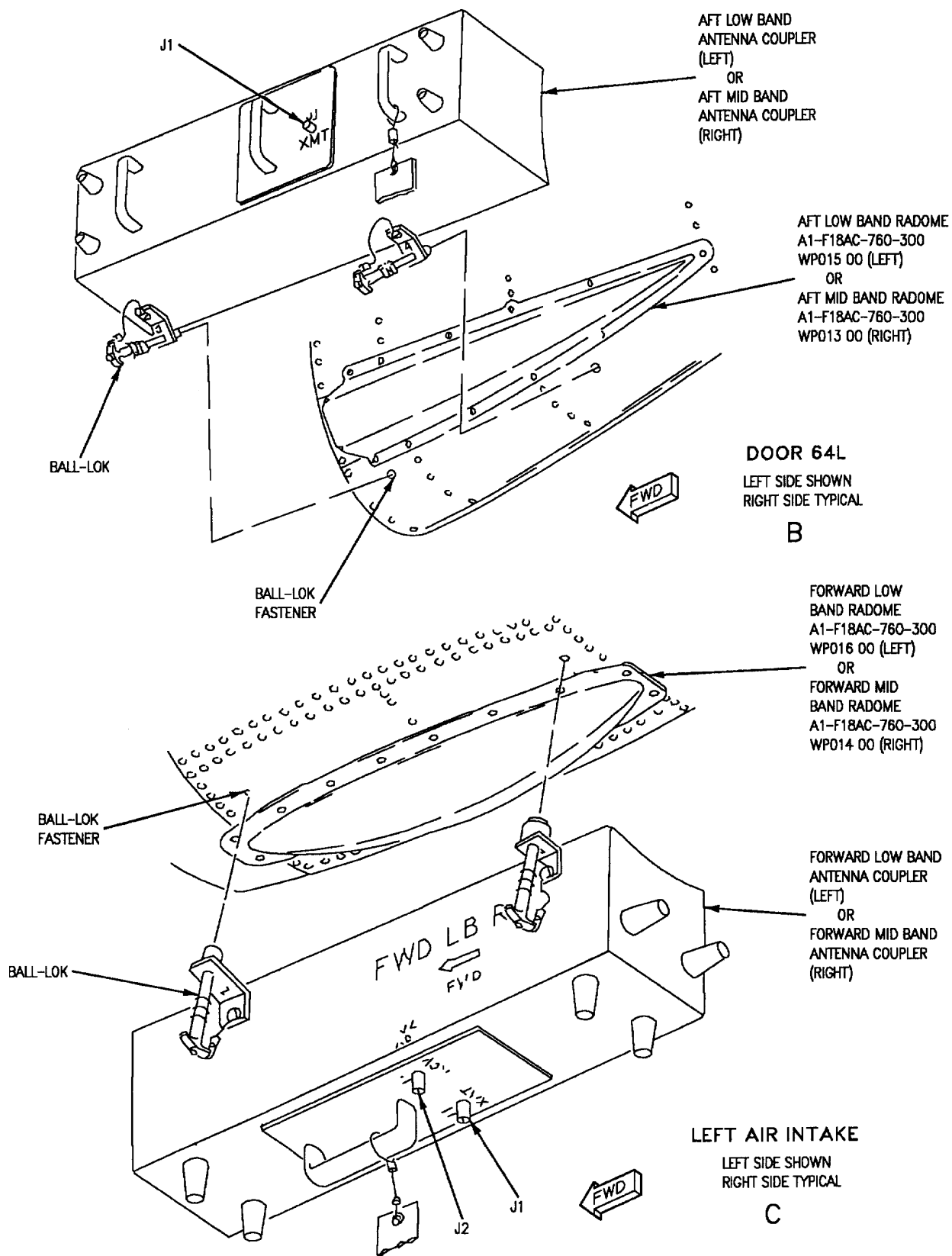


Figure 1. Antenna Coupler Installation (Sheet 3)

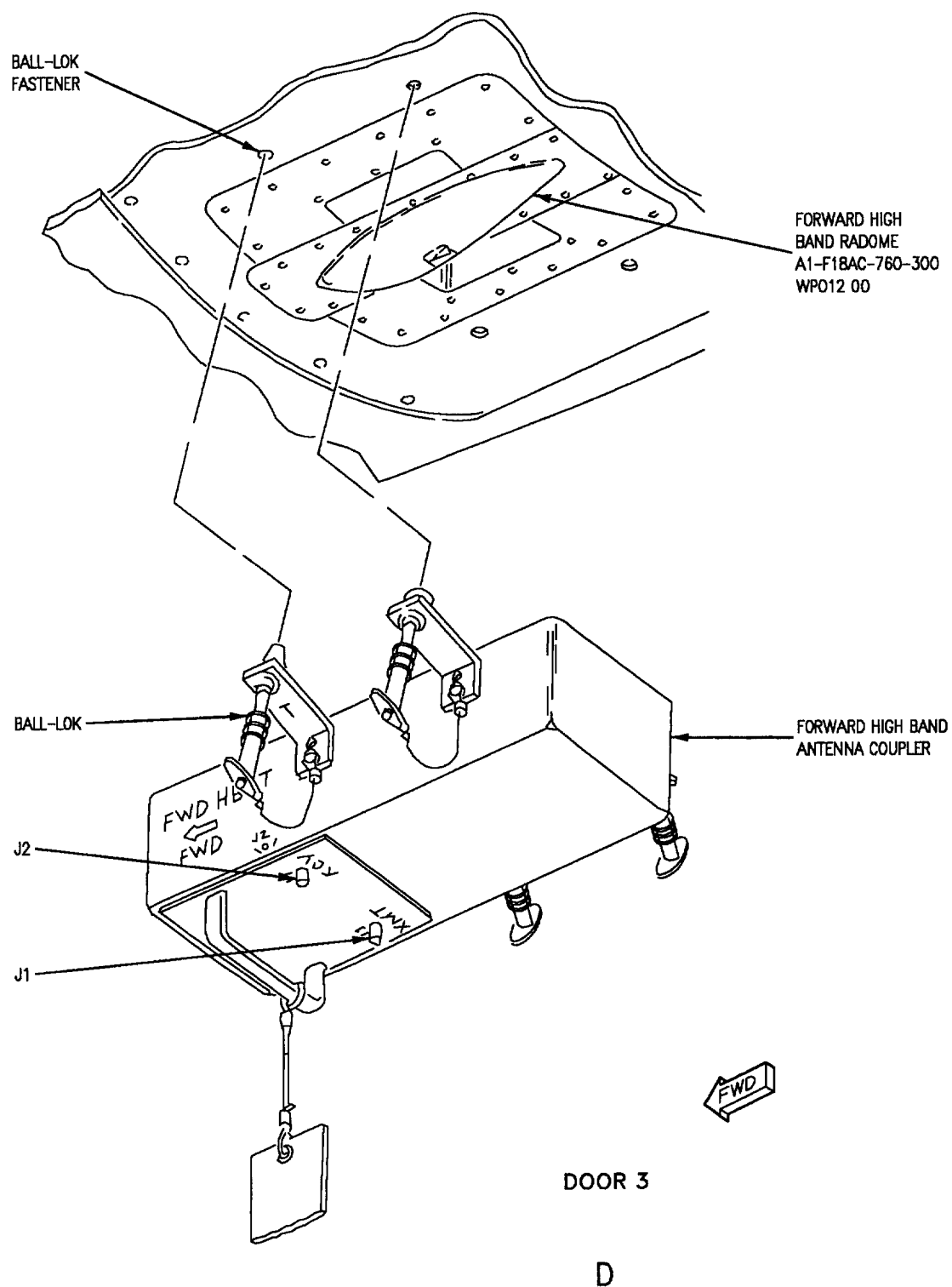


Figure 1. Antenna Coupler Installation (Sheet 4)

INDEX NO.	PART NUMBER	DESCRIPTION							UNITS PER ASSY	USE ON CODE	SM&R CODE
		1	2	3	4	5	6	7			
1	3036600G1	ANTENNA COUPLER INSTALLATION . . . . .							1		PEOGD
		. COUPLER SET, (ANTENNA . . . . .									
		COUPLER INSTALLATION) (94117)									
		(MCDONNELL SPEC 74-769000-101)									
		(SUPPORT EQUIPMENT)									

Figure 1. Antenna Coupler Installation (Sheet 5)

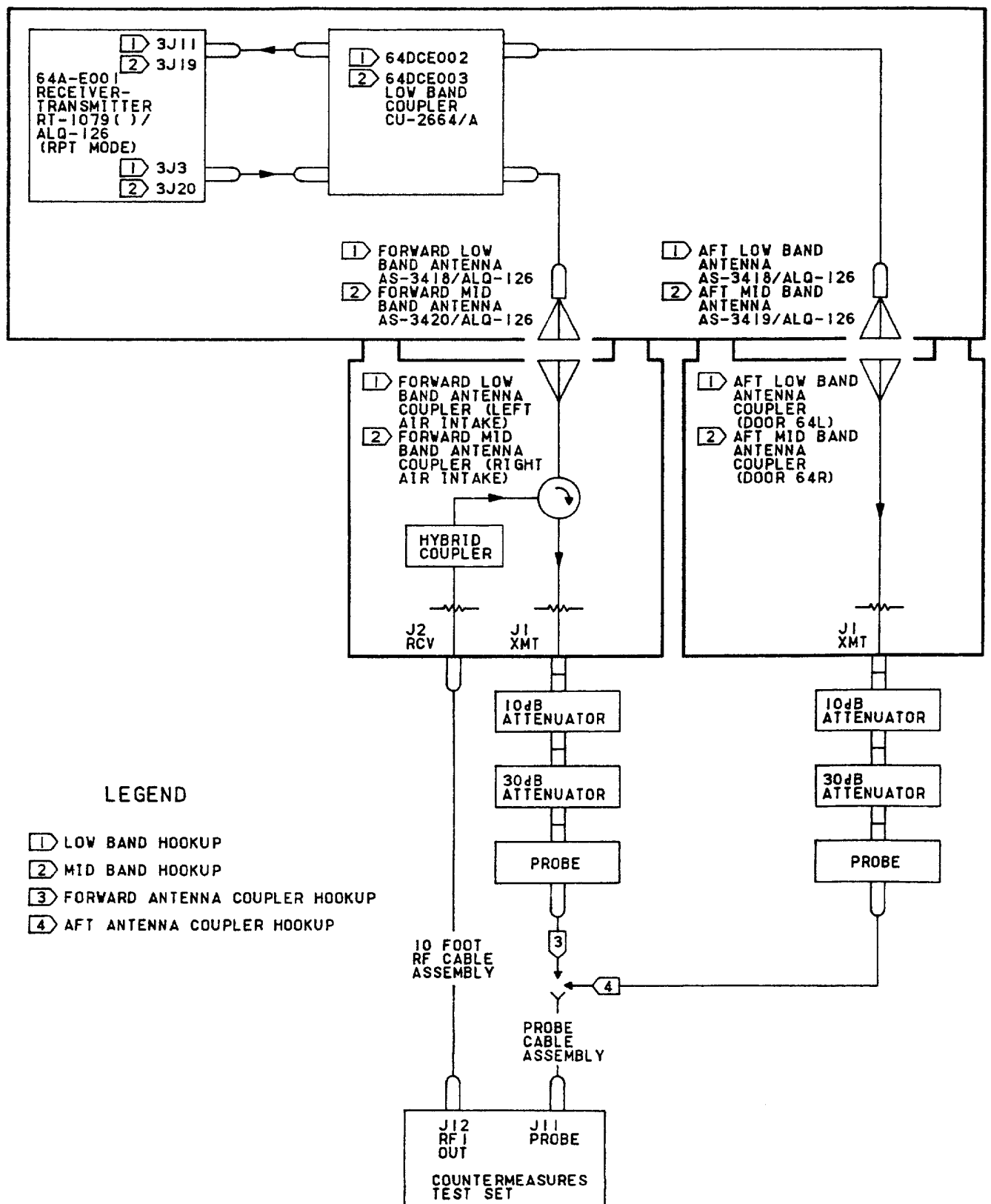


Figure 2. Low Band and Mid Band Test Hookup

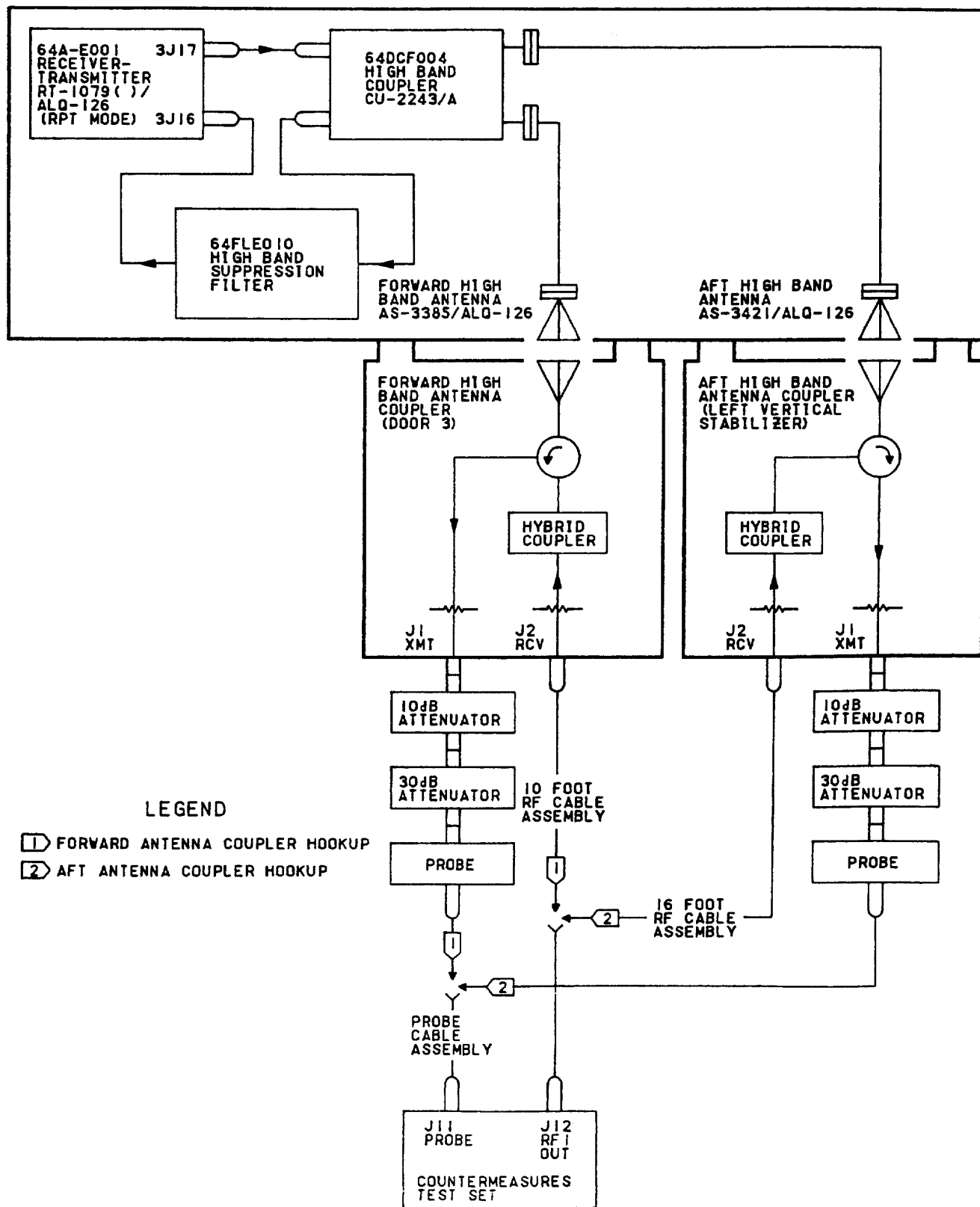


Figure 3. High Band Test Hookup

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**T1 - TECHNIQUES TEST**  
**COUNTERMEASURES SET**

**Reference Material**

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Tactical Electronic Warfare Systems .....	A1-F18AC-760-200
Locator .....	WP015 00
Functional Test .....	WP025 00

**Alphabetical Index**

Subject	Page No.
Introduction .....	1
Table 1. T1 Techniques Test .....	2
Table 2. Test Options .....	5
Table 3. Low Band COSR NOGO .....	6
Table 4. Mid Band COSR NOGO .....	6
Table 5. High Band COSR NOGO .....	7
Techniques Test .....	1

**Record of Applicable Technical Directives**

None

**1. INTRODUCTION.**

2. When T1 is being done as a result of requirements from Daily/Servicing/Special Condition Maintenance Requirements Cards (A1-F18AC-MRC-200), each band (lower, mid and high) must be tested. For ease of hookup, forward low, mid and high band antenna couplers were chosen for the test. The operator may run the test using either forward or aft antenna couplers. When aft antenna couplers are used, test hookup (WP025 00) must be modified to run the test.

3. When T1 is being done and T3 and/or T5 are also required, all tests may be done before disconnecting countermeasures test set (test set) from antenna coupler.

**4. TECHNIQUES TEST.**

5. The test set waits 6 seconds after starting the output of a threat stimulus for the Receiver-Transmitter

RT-1079( )/ALQ-126 to stabilize. During this mode the display will indicate:

- a. seconds remaining in wait mode (upper left)
- b. RF1 output frequency (upper middle)
- c. WAIT (lower right)

6. During the Test In Progress mode, the test set is actively testing the Receiver-Transmitter RT-1079( )/ALQ-126. The length of this mode is variable, depending on which threat is being tested. During this mode the display will indicate:

- a. seconds remaining in Test In Progress mode (upper left)
- b. RF1 output frequency (upper middle)
- c. TIP (lower right)

7. If one or more of the threat characteristics fail during testing, the test set will display these failures. Further isolation of the test failures may be made using table 2. The interpretation of the results using table 2 may be done by the test set operator.

### Table 1. T1 Techniques Test

[illegible]



Table 1. T1 Techniques Test (Continued)

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>g. Remove 10 foot RF cable assembly from test coupler set and connect to J12 RF1 OUT on countermeasures test set (test set).</p> <p>2. LOW BAND.</p> <p>a. Connect test set to forward low band antenna coupler. Connect for a lower band test hookup (WP025 00).</p> <p>b. On ECM control panel assembly, set ECM mode switch to RPT.</p> <p>c. On test set, do the substeps below:</p> <p>(1) On keyboard, press keyboard switches in listed sequence; T, 1 and ENT.</p> <p>(2) When display indicates BAND????, press L, then ENT keyboard switches.</p> <p>(3) Press keyboard ESC switch to return test set to TEST????.</p>	<p>At completion of test, display indicates TEST GO.</p>	<p>On keyboard, press ENT switch, read display and do the below:</p> <p>1. LPRF NOGO, replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00).</p> <p>2. COSR NOGO, do table 3.</p>
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If forward low band antenna part of T3 and/or low band part of T5 are to be done next, omit steps d through f.</p>		
<p>d. On ECM control panel assembly, set ECM mode switch to STBY.</p> <p>e. Disconnect test set from forward low band antenna coupler.</p> <p>f. If no other tests are to be done using the test set, do shutdown (WP025 00).</p>		

Table 1. T1 Techniques Test (Continued)

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>3. MID BAND.</p> <p>a. Connect test set to forward mid band antenna coupler. Connect for a mid band test hookup (WP025 00).</p> <p>b. On ECM control panel assembly, set ECM mode switch to RPT.</p> <p>c. On test set, do the substeps below:</p> <p>(1) On keyboard, press keyboard switches in listed sequence; T, 1 and ENT.</p> <p>(2) When display indicates BAND????, press M, then ENT keyboard switches.</p> <p>(3) Press keyboard ESC switch to return test set to TEST????.</p>	<p>At completion of test, display indicates TEST GO.</p>	<p>On keyboard press ENT switch, read display and do the below:</p> <p>1. LPRF NOGO, replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00).</p> <p>2. COSRO NOGO, do table 4.</p>
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If forward mid band antenna part of T3 and/or mid band part of T5 are to be done next, omit steps d through f.</p>		
<p>d. On ECM control panel assembly, set ECM mode switch to STBY.</p> <p>e. Disconnect test set from forward mid band antenna coupler.</p> <p>f. If no other tests are to be done using the test set, do shutdown (WP025 00).</p> <p>4. HIGH BAND.</p> <p>a. Connect test set to forward high band antenna coupler. Connect for a high band test hookup (WP025 00).</p>		

Table 1. T1 Techniques Test (Continued)

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>b. On ECM control panel assembly, set ECM mode switch to RPT.</p> <p>c. On test set, do the substeps below:</p> <p>(1) On keyboard, press keyboard switches in listed sequence; T, 1 and ENT.</p> <p>(2) When display indicates BAND????, press H, then ENT keyboard switches.</p> <p>(3) Press keyboard ESC switch to return test set to TEST????.</p>	At completion of test, display indicates TEST GO.	<p>On keyboard, press ENT switch, read display and do the below:</p> <p>1. LPRF NOGO, replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00).</p> <p>2. COSRO NOGO, do table 5.</p>
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If forward high band antenna part of T3 and/or high band part of T5 are to be done next, omit the below steps.</p>		
<p>d. On ECM control panel assembly, set ECM mode switch to STBY.</p> <p>e. Disconnect test set from forward high band antenna coupler.</p> <p>f. If no other tests are to be done using the test set, do Shutdown (WP025 00).</p>		

Table 2. Test Options

Test	Code	Description
T1	S	Techniques test with manual step through of test sequence A Advance manual step through R Reverse manual step through ENT Operates selected test once C Operates selected test continuously F Examine test results ESC Stops test in progress
	SF	Operator selected test frequency

**Table 3. Low Band COSR NOGO**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
3036600G1	Test Coupler Set	
3048500G1	Countermeasures Test Set	
Materials Required		
None		
Malfunction is caused by one of the items listed below:		
Receiver-Transmitter RT-1079( )/ALQ-126		
ALQ-126 Low Band RF Components		
Procedure	No	Yes
a. On test set, press ENT switch. Does DLY NOGO or INHB NOGO appear on the display? .....	c	b
b. Replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00). .....	-	-
c. For PWR NOGO, do low band receive part of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	d	e
d. Do a low band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss test (WP020 00). .....	-	-
e. Do forward low band antenna transmit part of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	d	b

**Table 4. Mid Band COSR NOGO**

Support Equipment Required	
Part Number or Type Designation	Nomenclature
3036600G1	Test Coupler Set
3048500G1	Countermeasures Test Set
Materials Required	
None	
Malfunction is caused by one of the items listed below:	
Receiver-Transmitter RT-1079( )/ALQ-126	
ALQ-126 Low Band RF Components	

**Table 4. Mid Band COSR NOGO (Continued)**

<b>Procedure</b>	<b>No</b>	<b>Yes</b>
a. On test set, press ENT switch. Does DLY NOGO or INHB appear on the display? . . . . .	c	b
b. Replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00). . . . .	-	-
c. For PWR NOGO, do mid band receive part of T3A (WP028 00). At completion of test, was TEST GO displayed? . . . . .	d	e
d. Do a mid band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss test (WP020 00). . . . .	-	-
e. Do forward mid band antenna transmit part of T3A (WP028 00). At completion of test, was TEST GO displayed? . . . . .	d	b

**Table 5. High Band COSR NOGO**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
3036600G1	Test Coupler Set	
3048500G1	Countermeasures Test Set	
Materials Required		
None		
Malfunction is caused by one of the items listed below:		
Receiver-Transmitter RT-1079( )/ALQ-126		
ALQ-126 Low Band RF Components		
Procedure	No	Yes
a. On test set, press ENT switch. Does DLY NOGO or INHB NOGO appear on the display? .....	c	b
b. Replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00). .....	-	-
c. For PWR NOGO, do forward high band antenna receive part of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	d	e
d. Do a high band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss test (WP020 00) .....	-	-
e. Do forward high band antenna transmit part of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	d	b

**THIS PAGE INTENTIONALLY LEFT BLANK.**

---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**T3 SYSTEM SWEEP TEST**  
**COUNTERMEASURES SET**

---

**Reference Material**

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Tactical Electronic Warfare Systems .....	A1-F18AC-760-200
Locator .....	WP015 00
Functional Test .....	WP025 00

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Introduction .....	1
System Sweep Test .....	1
Table 1. Preliminary .....	2
Table 2. Forward High Band Antenna .....	3
Table 3. Forward Low Band Antenna .....	4
Table 4. Aft Low Band Antenna .....	5
Table 5. Forward Mid Band Antenna .....	5
Table 6. Aft Mid Band Antenna .....	6
Table 7 Aft High Band Antenna .....	7
Table 8. Test Options .....	8
Table 9. High Band TEST NOGO .....	8
Table 10. Low Band TEST NOGO .....	9
Table 11. Mid Band TEST NOGO .....	10

**Record of Applicable Technical Directives**

None

**1. INTRODUCTION.**

2. When T3 is being done as a result of requirements from Daily/Servicing/Special Condition Maintenance Requirement Cards (A1-F18AC-MRC-200), table 2 through 7 must be done.

3. When T3 is being done and T1 and/or T5 are also required to be completed using the same antenna coupler, all required tests may be done before disconnecting countermeasures test set (test set) from antenna coupler.

**4. SYSTEM SWEEP TEST.**

5. The test set waits approximately 4 seconds before sweeping to allow the various components to stabilize. During the sweep the display will indicate:

- a. initial sweep frequency in MHz (upper left)
- b. current sweep frequency in MHz (upper middle)
- c. end frequency in MHz (upper right)
- d. DEV (lower left)

- e. deviation between power received and reference (lower right)

display. The operator should press ENT switch to see if more than one hole was detected during test.
6. If HOLE NOGO is displayed, the center frequency of the hole will be displayed on upper middle part of

7. Further isolation of TEST NOGO's may be made by using table 8. The interpretation of the results using table 8 may be done by the operator.

Table 1. Preliminary

Procedure	Normal Indication	Remedy for Abnormal Indication
<b>System Required Components</b>  All system components installed.		
<b>Related Systems Required</b>  Avionics Cooling System Electrical System		
<b>Support Equipment Required</b>		
<b>Part Number or Type Designation</b>  3036600G1 3048500G1		<b>Nomenclature</b>  Test Coupler Set Countermeasures Test Set
<b>Materials Required</b>  None		
<b>NOTE</b>  For component locator, refer to WP015 00.		
a. Make sure electrical power is off (A1-F18AC-LMM-000).  b. Connect aircraft intercommunication equipment (A1-F18AC-LMM-000).  c. Do Initial Setup (WP025 00).  d. Do Antenna Coupler Installation (WP025 00).  e. Apply electrical power (A1-F18AC-LMM-000).  f. On GND PWR control panel assembly, set and hold 3 and 4 switch to A ON for three seconds.	Switches remain on (latched).	1. If switches unlatch in 10 to 30 seconds, apply external cooling air to aircraft.  2. If switches do not remain on, troubleshoot (A1-F18AC-420-200, WP006 00).



Table 1. Preliminary (Continued)

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>g. On ECM control panel assembly, set ECM mode switch to STBY.</p> <p>h. Do all or applicable parts of T3 system sweep test (tables 2 through 7).</p>	On LH advisory and threat warning indicator panel, STBY light comes on. Light goes off in approximately 4 minutes.	Do Countermeasures Set Built-In Test (WP014 00).

Table 2. Forward High Band Antenna

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>a. Do table 1.</p> <p>b. Connect countermeasures test set (test set) to forward high band antenna coupler. Connect for a high band test hookup (WP025 00).</p> <p>c. On ECM control panel assembly, set ECM mode switch to RPT.</p> <p>d. On test set, do the substeps below:</p> <p>(1) On keyboard, press keyboard switches in listed sequence; T, 3 and ENT.</p> <p>(2) When display indicates ANT???, press F, H, T and ENT keyboard switches.</p> <p>(3) When display indicates ATTN???, press keyboard ENT switch.</p> <p>(4) Press keyboard ESC switch to return test set to TEST???.</p>	At completion of test, display indicates TEST GO.	Do table 9.
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If high band portion of T1 and/or T6 are to be done next, omit the below steps.</p>		
<p>e. On ECM control panel assembly, set ECM mode switch to STBY.</p> <p>f. Disconnect test set from forward high band antenna coupler.</p> <p>g. If no other tests are to be done using the test set, do shutdown (WP025 00).</p>		

**Table 3. Forward Low Band Antenna**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>a. Do table 1.</p> <p>b. Connect countermeasures test set (test set) to forward low band antenna coupler. Connect for a low band test hookup (WP025 00).</p> <p>c. On ECM control panel assembly, set ECM mode switch to RPT.</p> <p>d. On test set, do the substeps below:</p> <p>(1) On keyboard, press keyboard switches in listed sequence; T, 3 and ENT.</p> <p>(2) When display indicates ANT???, press F, L, T and ENT keyboard switches.</p> <p>(3) When display indicates ATTN???, press keyboard ENT switch.</p> <p>(4) Press keyboard ESC switch to return test set to TEST???</p>	<p>At completion of test, display indicates TEST GO.</p>	<p>Do table 10.</p>
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If low band portion of T1 and/or T5 are to be done next, omit the below steps.</p>		
<p>e. On ECM control panel assembly, set ECM mode switch to STBY.</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If table 4 is to be done next, 10 foot rf cable assembly may be left installed on the forward low band antenna coupler.</p>		
<p>f. Disconnect test set from forward low band antenna coupler.</p> <p>g. If no other tests are to be done using the test set, do shutdown (WP025 00).</p>		

**Table 4. Aft Low Band Antenna**

<b>Procedure</b>	<b>Normal Indication</b>	<b>Remedy for Abnormal Indication</b>
<p>a. Do table 1.</p> <p>b. Connect countermeasures test set (test set) to forward and aft low band antenna couplers. Connect for low band test hookup (WP025 00).</p> <p>c. On ECM control panel assembly, set ECM mode switch to RPT.</p> <p>d. On test set, do the substeps below:</p> <p>(1) On keyboard, press keyboard switches in listed sequence; T, 3 and ENT.</p> <p>(2) When display indicates ANT????, press A, L, T and ENT keyboard switches.</p> <p>(3) When display indicates ATTN????, press keyboard ENT switch.</p> <p>(4) Press keyboard ESC switch to return test set to TEST????.</p> <p>e. On ECM control panel assembly, set ECM mode switch to STBY.</p> <p>f. Disconnect test set from forward and aft low band antenna couplers.</p> <p>g. If no other tests are to be done using test set, do shutdown (WP025 00).</p>	At completion of test, display indicates TEST GO.	Do table 10.

**Table 5. Forward Mid Band Antenna**

<b>Procedure</b>	<b>Normal Indication</b>	<b>Remedy for Abnormal Indication</b>
<p>a. Do table 1.</p> <p>b. Connect countermeasures test set (test set) to forward mid band antenna coupler. Connect for a mid band test hookup (WP025 00).</p>		

**Table 5. Forward Mid Band Antenna (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>c. On ECM control panel assembly, set ECM mode switch to RPT.</p> <p>d. On test set, do the substeps below:</p> <p>(1) On keyboard, press keyboard switches in following sequence; T, 3 and ENT.</p> <p>(2) When display indicates ANT???, press F, M, T and ENT keyboard switches.</p> <p>(3) When display indicates ATTN???, press keyboard ENT switch.</p> <p>(4) Press keyboard ESC switch to return the test set to TEST???.</p>	At completion of test, display indicates TEST GO.	Do table 11.
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If mid band portion of T1 and/or T5 are to be done next, omit the below steps.</p>		
<p>e. On ECM control panel assembly, set ECM mode switch to STBY.</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If table 6 is to be done next, 10 foot rf cable assembly may be left installed on the forward mid band antenna coupler.</p>		
<p>f. Disconnect test set from forward mid band antenna coupler.</p> <p>g. If no other tests are to be done using test set, do shutdown (WP025 00).</p>		

**Table 6. Aft Mid Band Antenna**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>a. Do table 1.</p> <p>b. Connect countermeasures test set (test set) to forward and aft mid band antenna couplers. Connect for a mid band test hookup (WP025 00).</p>		

**Table 6. Aft Mid Band Antenna (Continued)**

<b>Procedure</b>	<b>Normal Indication</b>	<b>Remedy for Abnormal Indication</b>
<p>c. On ECM control panel assembly, set ECM mode switch to RPT.</p> <p>d. On test set, do the substeps below:</p> <p>(1) On keyboard, press keyboard switches in listed sequence; T, 3 and ENT.</p> <p>(2) When display indicates ANT???, press A, M, T and ENT keyboard switches.</p> <p>(3) When display indicates ATTN???, press keyboard ENT switch.</p> <p>(4) Press keyboard ESC switch to return test set to TEST???.</p> <p>e. On ECM control panel assembly, set ECM mode switch to STBY.</p> <p>f. Disconnect test set from forward and aft mid band antenna couplers.</p> <p>g. If no other tests are to be done using test set, do shutdown (WP025 00).</p>	At completion of test, display indicates TEST GO.	Do table 11.

**Table 7. Aft High Band Antenna**

<b>Procedure</b>	<b>Normal Indication</b>	<b>Remedy for Abnormal Indication</b>
<p>a. Do table 1.</p> <p>b. Connect countermeasures test set (test set) to aft high band antenna coupler. Connect for a high band test hookup (WP025 00).</p> <p>c. On ECM control panel assembly, set ECM mode switch to RPT.</p> <p>d. On test set, do the substeps below:</p> <p>(1) On keyboard, press keyboard switches in listed sequence; T, 3 and ENT.</p>		

**Table 7. Aft High Band Antenna (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>(2) When display indicates ANT???, press A, H, T and ENT keyboard switches.</p> <p>(3) When display indicates ATTN???, press keyboard ENT switch.</p> <p>(4) Press keyboard ESC switch to return the test set to TEST???.</p> <p>e. On ECM control panel assembly, set ECM mode switch to STBY.</p> <p>f. Disconnect test set from aft high band antenna coupler.</p> <p>g. If no other tests are to be done using test set, do shutdown (WP025 00).</p>	At completion of test, display indicates TEST GO.	Do table 9.

**Table 8. Test Options**

Test	Option Code	Description
T3A	R	Compared Sweep Test. Range selected by operator.
	F	Compared Sweep Test. Fast mode.
	M	Compared Sweep Test. Manual tune.

**Table 9. High Band TEST NOGO**

Support Equipment Required	
Part Number or Type Designation	Nomenclature
3036600G1	Test Coupler Set
3048500G1	Countermeasures Test Set
Materials Required	
None	
Malfunction is caused by one of the items listed below:	
Receiver-Transmitter RT-1079( )/ALQ-126	
ALQ-126 Low Band RF Components	

**Table 9. High Band TEST NOGO (Continued)**

<b>Procedure</b>	<b>No</b>	<b>Yes</b>
a. On test set keyboard, press ENT switch. Is URNG NOGO or HOLE NOGO displayed? .....	i	b
b. Was forward high band antenna coupler used for section of T3 that failed? .....	g	c
c. Do forward high band antenna receive section T3A (WP028 00). At completion of test, was TEST GO displayed? .....	f	d
d. Do forward high band antenna transmit section of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	f	e
e. Replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00). ....	-	-
f. Do high band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss Test (WP020 00). ....	-	-
g. Do aft high band antenna receive section of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	f	h
h. Do aft high band antenna transmit section of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	f	e
i. Was forward high band antenna coupler used when SWPS NOGO was displayed? .....	h	d

**Table 10. Low Band TEST NOGO**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
3036600G1	Test Coupler Set	
3048500G1	Countermeasures Test Set	
Materials Required		
None		
Malfunction is caused by one of the items listed below:		
Receiver-Transmitter RT-1079( )/ALQ-126		
ALQ-126 Low Band RF Components		
Procedure	No	Yes
a. On test set keyboard, press ENT switch. Is URNG NOGO or HOLE NOGO displayed? .....	h	b
b. Do low band receive section of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	f	c
c. Was forward low band antenna coupler used for section of T3 that failed? .....	g	d
d. Do forward low band antenna transmit section of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	f	e

**Table 10. Low Band TEST NOGO (Continued)**

Procedure	No	Yes
e. Replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, 010 00). . . . .	-	-
f. Do low band AN/ALQ-126 Line Antenna Return Loss and Insertion Loss Test (WP020 00). . . . .	-	-
g. Do aft low band antenna transmit section of T3A (WP028 00). At completion of test, was TEST GO displayed? . . . . .	f	e
h. Was forward low band antenna coupler used when SWPS NOGO was displayed? . . . . .	g	d

**Table 11. Mid Band TEST NOGO**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
3036600G1	Test Coupler Set	
3048500G1	Countermeasures Test Set	
Materials Required		
None		
Malfunction is caused by one of the items listed below:		
Receiver-Transmitter RT-1079( )/ALQ-126		
ALQ-126 Low Band RF Components		
Procedure	No	Yes
a. On test set keyboard, press ENT switch. Is URNG NOGO or HOLE NOGO displayed? .....	h	b
b. Do mid band receive section of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	f	c
c. Was forward mid band antenna coupler used for section of T3 that failed? .....	g	d
d. Do forward mid band antenna transmit section of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	f	e
e. Replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00). ....	-	-
f. Do mid band AN/ALQ-126 Line Antenna Return Loss and Insertion Loss Test (WP020 00). .....	-	-
g. Do aft mid band antenna transmit section of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	f	e
h. Was forward mid band antenna coupler used when SWPS NOGO was displayed? .....	g	d



---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**T3A LINES AND ANTENNA SWEEP TEST**  
**COUNTERMEASURES SET**

---

**Reference Material**

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Line Maintenance Access Doors .....	A1-F18AC-LMM-010
Tactical Electronic Warfare Systems .....	A1-F18AC-760-200
Locator .....	WP015 00
Functional Test .....	WP025 00

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Introduction .....	1
Lines and Antenna Sweep, Test .....	1
Table 1. Preliminary .....	2
Table 2. Forward High Band Antenna Receive .....	3
Table 3. Forward High Band Antenna Transmit .....	4
Table 4. Forward Low Band Antenna Transmit .....	6
Table 5. Aft Low Band Antenna Transmit .....	7
Table 6. Forward Mid Band Antenna Transmit .....	8
Table 7. Aft Mid Band Antenna Transmit .....	9
Table 8. Low Band Receive .....	10
Table 9. Mid Band Receive .....	11
Table 10. Aft High Band Antenna Receive .....	13
Table 11. Aft High Band Antenna Transmit .....	14
Table 12. Test Options .....	15
T3A Transmission Line Sweep Test, Figure 1 .....	16

**Record of Applicable Technical Directives**

None

**1. INTRODUCTION.**

2. When T3A is being done as a result of requirements from Daily/Service Condition Maintenance Requirement Cards (A1-F18AC-MRC-200), table 1 thru table 11 must be done.

3. When T3A is being done as a result of troubleshooting requirements, only table 1 and table of interest must be done.

**4. LINES AND ANTENNA SWEEP TEST.**

5. To aid troubleshooting, T3A has been divided into 11 tables. Tables 2 thru 11 contain testing according to antenna and function (receive or transmit). Preliminary information is contained in table 1.

6. During testing, the prompt LINE???? will be displayed. The countermeasures test set (test set) is asking for the line length (in feet) of the rf cable assem-

bly connected to J12 RF1 OUT to be entered. The upper right portion of the display will indicate the line length normally used for the antenna selected. If the line length displayed is the same as being used, pressing ENT switch will enter the line length displayed. If the line length being used is not the same length as displayed, the line length of the rf cable assembly used must be entered (10 or 16 feet).

7. The test set waits approximately four seconds before sweeping to allow the various components to stabilize. During the sweep the display will indicate:

- a. initial sweep frequency in MHz (upper left)
- b. current sweep frequency in MHz (upper middle)

- c. end frequency in MHz (upper right)
  - d. DEV (lower left)
  - e. deviation between power received and reference (lower right)
8. At completion of test, if TEST NOGO is displayed, pressing ENT switch will display failed portion of test.
- SWPS NOGO indicates excessive line degradation  
HOLE NOGO indicates rf hole detected
9. Further isolation of TEST NOGO may be made by using table 12. The interpretation of the results from using table 12 may be done by the operator.

Table 1. Preliminary

Procedure	Normal Indication	Remedy for Abnormal Indication
<b>System Required Components</b>		
All antenna system components installed.		
<b>Support Equipment Required</b>		
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>	
3036600G1	Test Coupler Set	
3048500G1	Countermeasures Test Set	
<b>Materials Required</b>		
None		
<b>NOTE</b>		
For component locator, refer to WP015 00.		
a. Make sure electrical power is off (A1-F18AC-LMM-000).		
b. Open door 14L (A1-F18AC-LMM-010).		
c. Do antenna coupler installation (WP025 00).		

Table 1. Preliminary (Continued)

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>d. Do Initial Setup (WP025 00).</p> <p>e. Do all or applicable parts of T3A lines and antenna sweep test (tables 2 thru 11).</p>		

Table 2. Forward High Band Antenna Receive

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>a. Do table 1.</p> <p>b. Disconnect 64P-E001R and 64P-E001S from Receiver-Transmitter RT-1079( )/ALQ-126 (ALQ-126 receiver-transmitter). If ALQ-126 receiver-transmitter is not installed, remove 64P-E001R and 64P-E001S from the stowed position.</p> <p>c. Connect test set for a high band receive hookup using forward high band antenna coupler (fig 1).</p> <p>d. On the test set, do the substeps below:</p> <p>(1) On keyboard, press switches in listed sequence; T, 3, A and ENT.</p> <p>(2) When display indicates ANT???, press keyboard switches in listed sequence; F, H, R and ENT.</p> <p>(3) When display indicates LINE???, press keyboard ENT switch.</p> <p>(4) Press keyboard ESC switch to return test set to TEST???</p> <p>e. Disconnect 10 foot rf cable assembly from forward high band antenna coupler.</p> <p>f. Disconnect probe cable assembly and adapter from 64P-E001R.</p>	<p>At completion of test, display indicates TEST GO.</p>	<p>Do High Band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss Test (WP020 00).</p>

**Table 2. Forward High Band Antenna Receive (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p style="text-align: center;"><b>NOTE</b></p> <p>If table 10 is to be done next, omit the below steps.</p> <p>g. Disconnect adapter from probe cable assembly.</p> <p>h. Disconnect adapter and termination from 64P-E001S.</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p>If T3A is to be done on other high band lines, omit the below steps.</p> <p>i. Connect connectors 64P-E001R and 64P-E001S to ALQ-126 receiver-transmitter. If ALQ-126 receiver-transmitter is not installed, return connectors 64P-E001R and 64P-E001S to the stowed position.</p> <p>j. If no other tests are to be done using test set, do shutdown (WP025 00).</p>		

**Table 3. Forward High Band Antenna Transmit**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>a. Do table 1.</p> <p>b. Disconnect 64P-E001R and 64P-E001S from Receiver-Transmitter RT-1079( )/ALQ-126 (ALQ-126 receiver-transmitter). If ALQ-126 receiver-transmitter is not installed, remove 64P-E001R and 64P-E001S from the stowed position.</p> <p>c. Connect test set for a high band transmit hookup using forward high band antenna coupler (fig 1).</p> <p>d. On the test set, do the substeps below:</p> <p>(1) On keyboard, press switches in listed sequence; T, 3, A and ENT.</p>		

**Table 3. Forward High Band Antenna Transmit (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>(2) When display indicates ANT???, press keyboard switches in listed sequence; F, H, T and ENT.</p> <p>(3) When display indicates LINE???, press keyboard ENT switch.</p> <p>(4) Press keyboard ESC switch to return test set to TEST???.</p> <p>e. Disconnect probe cable assembly from forward high band antenna coupler.</p> <p>f. Disconnect 10 foot rf cable assembly and adapter from 64P-E001S.</p>	At completion of test, display indicates TEST GO.	Do High Band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss Test (WP020 00).
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If table 11 is to be done next, omit the below steps.</p>		
<p>g. Disconnect adapter from 10 foot rf cable assembly.</p> <p>h. Disconnect adapter and termination from 64P-E001R.</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If T3A is to be done on other high band lines, omit the below steps.</p>		
<p>i. Connect connectors 64P-E001R and 64P-E001S to ALQ-126 receiver-transmitter. If ALQ-126 receiver-transmitter is not installed, return connectors 64P-E001R and 64P-E001S to the stowed position.</p> <p>j. If no other tests are to be done using test set, do shutdown (WP025 00).</p>		

**Table 4. Forward Low Band Antenna Transmit**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>a. Do table 1.</p> <p>b. Disconnect 64P-E001L and 64P-E001C from Receiver-Transmitter RT-1079( )/ALQ-126 (ALQ-126 receiver-transmitter). If ALQ-126 receiver-transmitter is not installed, remove 64P-E001L and 64P-E001C from the stowed position.</p> <p>c. Connect test set for a low band transmit hookup using forward antenna coupler configuration (fig 1).</p> <p>d. On the test set, do the substeps below:</p> <p>(1) On keyboard, press switches in listed sequence; T, 3, A and ENT.</p> <p>(2) When display indicates ANT???, press keyboard switches in listed sequence; F, L, T and ENT.</p> <p>(3) When display indicates LINE???, press keyboard ENT switch.</p> <p>(4) Press keyboard ESC switch to return test set to TEST???</p> <p>e. Disconnect probe cable assembly from forward low band antenna coupler.</p>	<p>At completion of test, display indicates TEST GO.</p>	<p>Do Low Band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss Test (WP020 00).</p>
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If table 5 is to be done next, omit the below steps.</p>		
<p>f. Disconnect 10 foot RF cable assembly and adapter from 64P-E001C.</p> <p>g. Disconnect adapter and termination from 64P-E001L.</p> <p>h. Connect connectors 64P-E001C and 64P-E001L to ALQ-126 receiver-transmitter. If ALQ-126 receiver-transmitter is not installed, return connectors 64P-E001C and 64P-E001L to the stowed position.</p> <p>i. If no other tests are to be done using the test set, do shutdown (WP025 00).</p>		

**Table 5. Aft Low Band Antenna Transmit**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>a. Do table 1.</p> <p>b. Disconnect 64P-E001L and 64P-E001C from Receiver-Transmitter RT-1079( )/ALQ-126 (ALQ-126 receiver-transmitter). If ALQ-126 receiver-transmitter is not installed, remove 64P-E001L and 64P-E001C from the stowed position.</p> <p>c. Connect test set for a low band transmit hookup using aft antenna coupler configuration (fig 1).</p> <p>d. On the test set, do the substeps below:</p> <p>(1) On keyboard, press switches in listed sequence; T, 3, A and ENT.</p> <p>(2) When display indicates ANT???, press keyboard switches in listed sequence; A, L, T and ENT.</p> <p>(3) When display indicates LINE???, press keyboard ENT switch.</p> <p>(4) Press keyboard ESC switch to return test set to TEST???.</p> <p>e. Disconnect probe cable assembly from low band antenna coupler.</p> <p>f. Disconnect 10 foot RF cable assembly and adapter from 64PE001C.</p> <p>g. Disconnect adapter and termination from 64P-E001L.</p> <p>h. Connect connectors 64P-E001C and 64P-E001L to ALQ-126 receiver-transmitter. If ALQ-126 receiver-transmitter is not installed, return connectors 64P-E001C and 64P-E001L to the stowed position.</p> <p>i. If no other tests are to be done using test set, do shutdown (WP025 00).</p>	<p>At completion of test, display indicates TEST GO.</p>	<p>Do Low Band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss Test (WP020 00).</p>

**Table 6. Forward Mid Band Antenna Transmit**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>a. Do table 1.</p> <p>b. Disconnect 64P-E001U and 64P-E001V from Receiver Transmitter RT-1079( )/ALQ-126 (ALQ-126 receiver-transmitter). If ALQ-126 receiver-transmitter is not installed, remove 64P-E001U and 64P-E001V from the stowed position.</p> <p>c. Connect test set for a mid band transmit hookup using forward antenna coupler configuration (fig 1).</p> <p>d. On the test set, do the substeps below:</p> <p>(1) On keyboard, press switches in listed sequence; T, 3, A and ENT.</p> <p>(2) When display indicates ANT???, press keyboard switches in listed sequence; F, M, T and ENT.</p> <p>(3) When display indicates LINE???, press keyboard ENT switch.</p> <p>(4) Press keyboard ESC switch to return test set to TEST???.</p> <p>e. Disconnect probe cable assembly from forward mid band antenna coupler.</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If table 7 is to be done next, omit the below steps.</p>		
<p>f. Disconnect 10 foot rf cable assembly and adapter from 64P-E001V.</p> <p>g. Disconnect adapter and termination from 64P-E001U.</p>	At completion of test, display indicates TEST GO.	Do Mid Band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss Test (WP020 00).



**Table 6. Forward Mid Band Antenna Transmit (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>h. Connect connectors 64P-E001V and 64P-E001U to ALQ-126 receiver-transmitter. If ALQ-126 receiver-transmitter is not installed, return connectors 64P-E001V and 64P-E001U to the stowed position.</p> <p>i. If no other tests are to be done using test set, do shutdown (WP025 00).</p>		

**Table 7. Aft Mid Band Antenna Transmit**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>a. Do table 1.</p> <p>b. Disconnect 64P-E001U and 64P-E001V from Receiver-Transmitter RT-1079( )/ALQ-126 (ALQ-126 receiver-transmitter). If ALQ-126 receiver-transmitter is not installed, remove 64P-E001U and 64P-E001V from the stowed position.</p> <p>c. Connect test set for a mid band transmit hookup using aft antenna coupler configuration (fig 1).</p> <p>d. On the test set, do the substeps below:</p> <p>(1) On keyboard, press switches in listed sequence; T, 3, A and ENT.</p> <p>(2) When display indicates ANT???, press keyboard switches in listed sequence; A, M, T and ENT.</p> <p>(3) When display indicates LINE???, press keyboard ENT switch.</p> <p>(4) Press keyboard ESC switch to return test set to TEST???.</p> <p>e. Disconnect probe cable assembly from aft mid band antenna coupler.</p>	<p>At completion of test, display indicates TEST GO.</p>	<p>Do Mid Band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss Test (WP020 00).</p>

**Table 7. Aft Mid Band Antenna Transmit (Continued)**

<b>Procedure</b>	<b>Normal Indication</b>	<b>Remedy for Abnormal Indication</b>
<p>f. Disconnect 10 foot rf cable assembly and adapter from 64P-E001V.</p> <p>g. Disconnect adapter and termination from 64P-E001U.</p> <p>h. Connect connectors 64P-E001V and 64P-E001U to ALQ-126 receiver-transmitter. If ALQ-126 receiver-transmitter is not installed, return connectors 64P-E001V and 64P-E001U to the stowed position.</p> <p>i. If no other tests are to be done using test set, do shutdown (WP025 00).</p>		

**Table 8. Low Band Receive**

<b>Procedure</b>	<b>Normal Indication</b>	<b>Remedy for Abnormal Indication</b>
<p>a. Do table 1.</p> <p>b. Disconnect 64P-E001C and 64P-E001L from Receiver-Transmitter RT-1079( )/ALQ-126 (ALQ-126 receiver-transmitter). If ALQ-126 receiver-transmitter is not installed, remove 64P-E001C and 64P-E001L from the stowed position.</p> <p>c. Connect test set for a low band receive hookup (fig 1).</p> <p>d. On the test set, do the substeps below:</p> <p>(1) On keyboard, press switches in listed sequence; T, 3, A and ENT.</p> <p>(2) When display indicates ANT???, press keyboard switches in listed sequence; F, L, R and ENT.</p> <p>(3) When display indicates LINE???, press keyboard ENT switch.</p>	<p>At completion of test, display indicates TEST GO.</p>	<p>Do Mid Band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss Test (WP020 00).</p>

**Table 8. Low Band Receive (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>(4) Press keyboard ESC switch to return test set to TEST???.</p> <p>e. Disconnect test set from 64P-E001L and forward low band antenna coupler.</p> <p>f. Disconnect adapter from probe cable assembly.</p> <p>g. Disconnect adapter and termination from 64P-E001C.</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If table 4 is to be done next, omit the below steps.</p>		
<p>h. If ALQ-126 receiver-transmitter is installed connect connectors 64P-E001L and 64P-E001C. If ALQ-126 receiver-transmitter is not installed, return connectors 64P-E001L and 64P-E001C to stowed position.</p> <p>i. If no other tests are to be done using the test set, do shutdown (WP025 00).</p>		

**Table 9. Aft Mid Band Receive**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>a. Do table 1.</p> <p>b. Disconnect 64P-E001U and 64P-E001V from Receiver-Transmitter RT-1079( )/ALQ-126 (ALQ-126 receiver-transmitter). If ALQ-126 receiver-transmitter is not installed, remove 64P-E001U and 64P-E001V from the stowed position.</p> <p>c. Connect test set for a mid band receive hookup (fig 1).</p> <p>d. On the test set, do the substeps below:</p>		

**Table 9. Aft Mid Band Receive (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>(1) On keyboard, press switches in listed sequence; T, 3, A and ENT.</p> <p>(2) When display indicates ANT????, press keyboard switches in listed sequence; F, M, R and ENT.</p> <p>(3) When display indicates LINE????, press keyboard ENT switch.</p> <p>(4) Press keyboard ESC switch to return test set to TEST????.</p> <p>e. Disconnect test set from 64P-E001U and forward mid band antenna coupler.</p> <p>f. Disconnect adapter from probe cable assembly.</p> <p>g. Disconnect adapter and termination from 64P-E001V.</p>	<p>At completion of test, display indicates TEST GO.</p>	<p>Do Mid Band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss Test (WP020 00).</p>
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If table 6 is to be done next, omit the below steps.</p> <p>h. If ALQ-126 receiver-transmitter is installed, connect connectors 64P-E001V and 64P-E001U. If ALQ-126 receiver-transmitter is not installed, return connectors 64P-E001V and 64P-E001U to the stowed position.</p> <p>i. If no other tests are to be done using test set, do shutdown (WP025 00).</p>		

**Table 10. Aft High Band Antenna Receive**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>a. Do table 1.</p> <p>b. Disconnect 64P-E001R and 64P-E001S from Receiver-Transmitter RT-1079( )/ALQ-126 (ALQ-126 receiver-transmitter). If ALQ-126 receiver-transmitter is not installed, remove 64P-E001R and 64P-E001S from the stowed position.</p> <p>c. Connect test set for a high band receive hookup using aft high band antenna coupler (fig 1).</p> <p>d. On the test set, do the substeps below:</p> <p>(1) On keyboard, press switches in listed sequence; T, 3, A and ENT.</p> <p>(2) When display indicates ANT???, press keyboard switches in listed sequence; A, H, R and ENT.</p> <p>(3) When display indicates LINES???, press keyboard ENT switch.</p> <p>(4) Press keyboard ESC switch to return test set to TEST???.</p> <p>e. Disconnect 16 foot rf cable assembly from aft high band antenna coupler.</p> <p>f. Disconnect probe cable assembly and adapter from 64P-E001R.</p>	<p>At completion of test, display indicates TEST GO.</p>	<p>Do High Band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss Test (WP020 00).</p>
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If table 2 is to be done next, omit the below steps.</p>		
<p>g. Disconnect adapter from probe cable assembly.</p> <p>h. Disconnect adapter and termination from 64P-E001S.</p>		

**Table 10. Aft High Band Antenna Receive (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If T3A is to be done on other high band lines, omit the below steps.</p> <p>i. Connect connectors 64P-E001R and 64P-E001S to ALQ-126 receiver-transmitter. If ALQ-126 receiver-transmitter is not installed, return connectors 64P-E001R and 64P-E001S to the stowed position.</p> <p>j. If no other tests are to be done using test set, do shutdown (WP025 00).</p>		

**Table 11. Aft High Band Antenna Transmit**

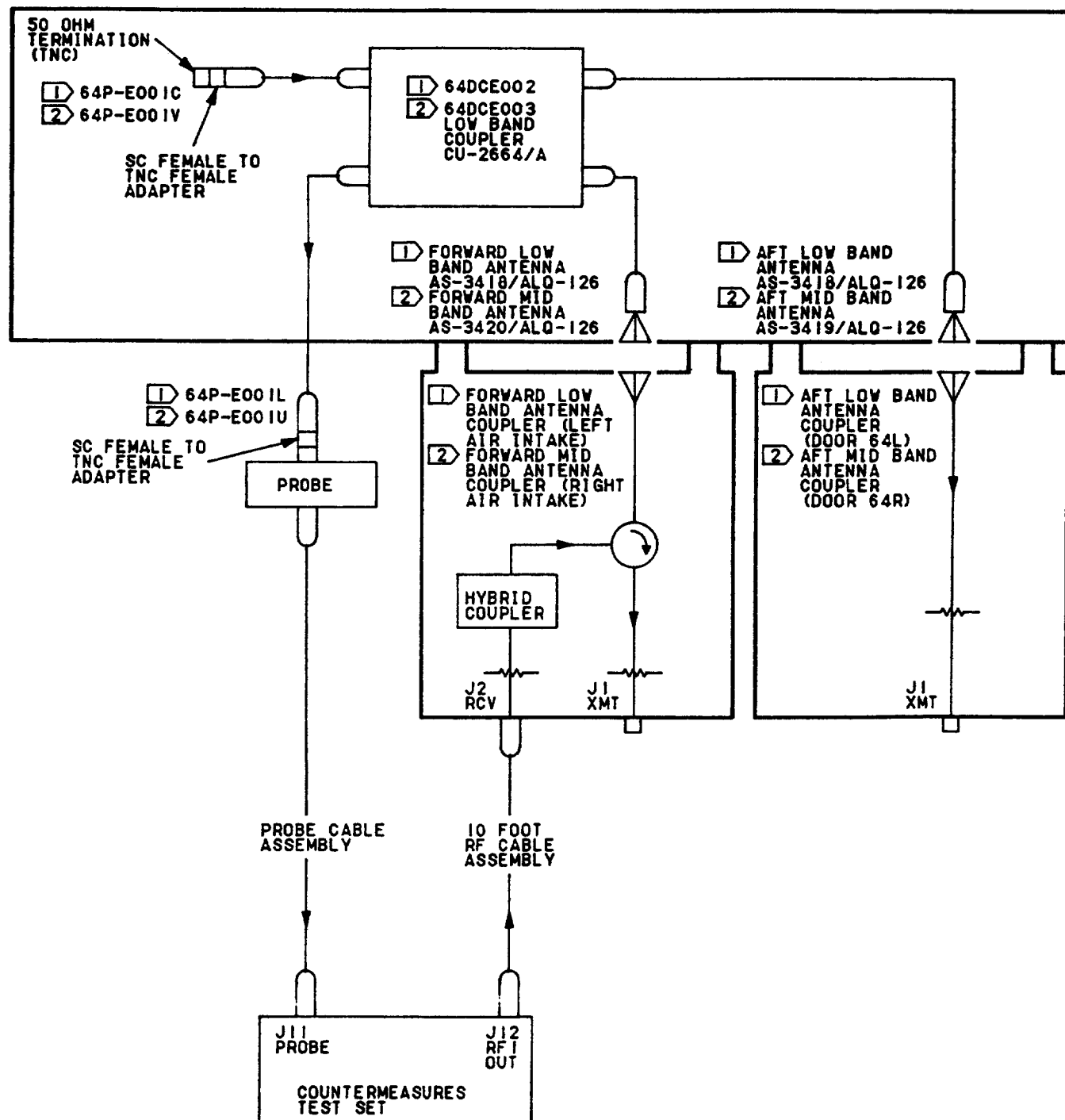
Procedure	Normal Indication	Remedy for Abnormal Indication
<p>a. Do table 1.</p> <p>b. Disconnect 64P-E001R and 64P-E001S from Receiver-Transmitter RT-1079( )/ALQ-126 (ALQ-126 receiver-transmitter). If ALQ-126 receiver-transmitter is not installed, remove 64P-E001R and 64P-E001S from the stowed position.</p> <p>c. Connect test set for a high band transmit hookup using aft high band antenna coupler (fig 1).</p> <p>d. On the test set, do the substeps below:</p> <p>(1) On keyboard, press switches in listed sequence; T, 3, A and ENT.</p> <p>(2) When display indicates ANT???, press keyboard switches in listed sequence; A, H, T and ENT.</p> <p>(3) When display indicates LINE???, press keyboard ENT switch.</p> <p>(4) Press keyboard ESC switch to return test set to TEST???</p>	<p>At completion of test, display indicates TEST GO.</p>	<p>Do High Band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss Test (WP020 00).</p>

**Table 11. Aft High Band Antenna Transmit (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>e. Disconnect probe cable assembly from aft high band antenna coupler.</p> <p>f. Disconnect 10 foot rf cable assembly and adapter from 64P-E001S.</p>		
<b>NOTE</b>		
If table 3 is to be done next, omit the below steps.		
<p>g. Disconnect adapter from 10 foot rf cable assembly.</p> <p>h. Disconnect adapter and termination from 64P-E001R.</p>		
<b>NOTE</b>		
If T3A is to be done on other high band lines, omit the below steps.		
<p>i. Connect connectors 64P-E001R and 64P-E001S to ALQ-126 receiver-transmitter. If ALQ-126 receiver-transmitter is not installed, return connectors 64P-E001R and 64P-E001S to the stowed position.</p> <p>j. If no other tests are to be done using test set, do shutdown (WP025 00).</p>		

**Table 12. Test Options**

Test	Option Code	Description
T3A	R	Compared Sweep Test. Range selected by operator.
	F	Compared Sweep Test. Fast mode.
	M	Compared Sweep Test. Manual tune.
	S	Uncompared Sweep Test of Antenna and Lines.



LOW BAND AND MID BAND RECEIVE HOOKUP

Figure 1. T3A Transmission Line Sweep Test (Sheet 1)



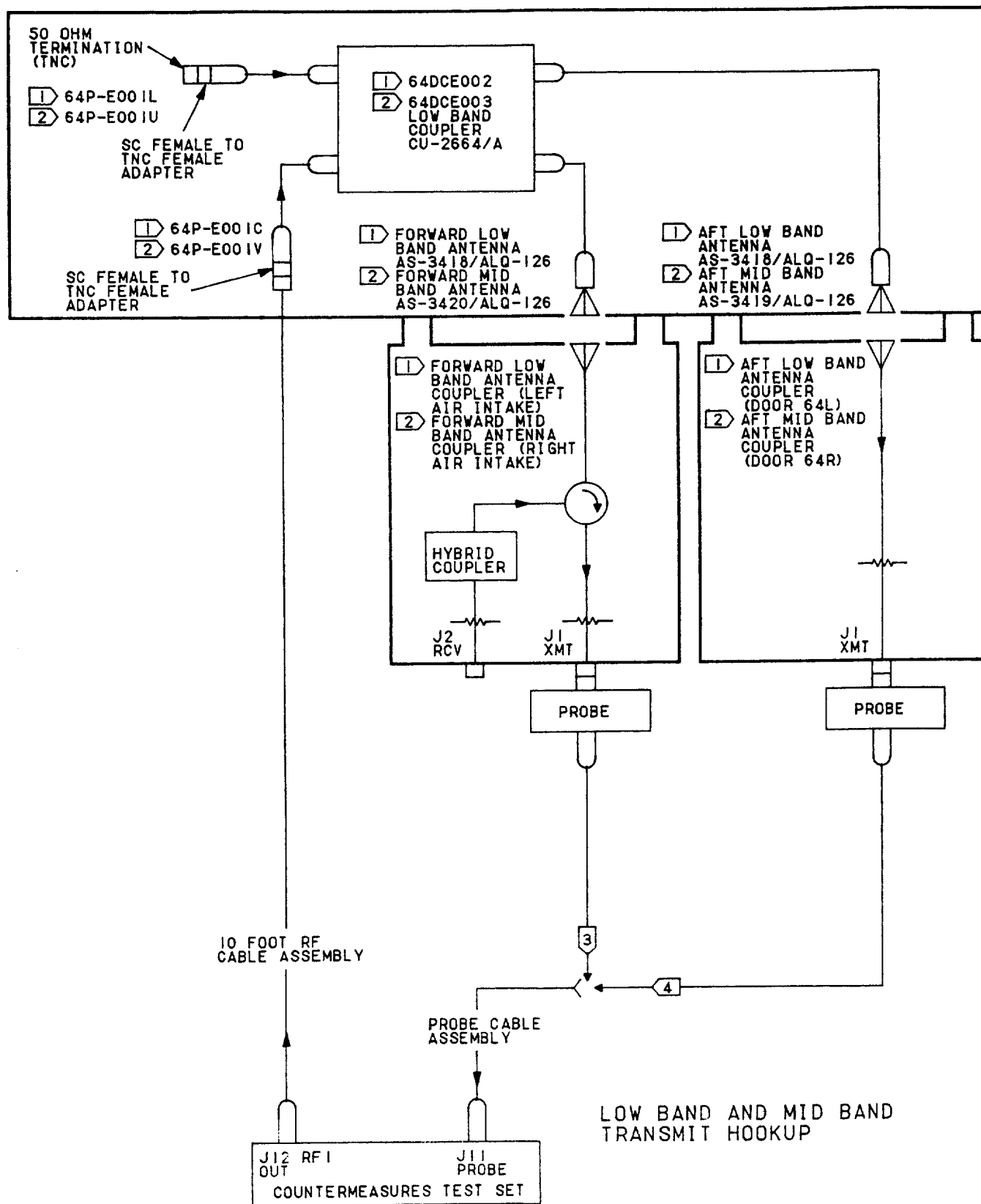


Figure 1. T3A Transmission Line Sweep Test (Sheet 2)

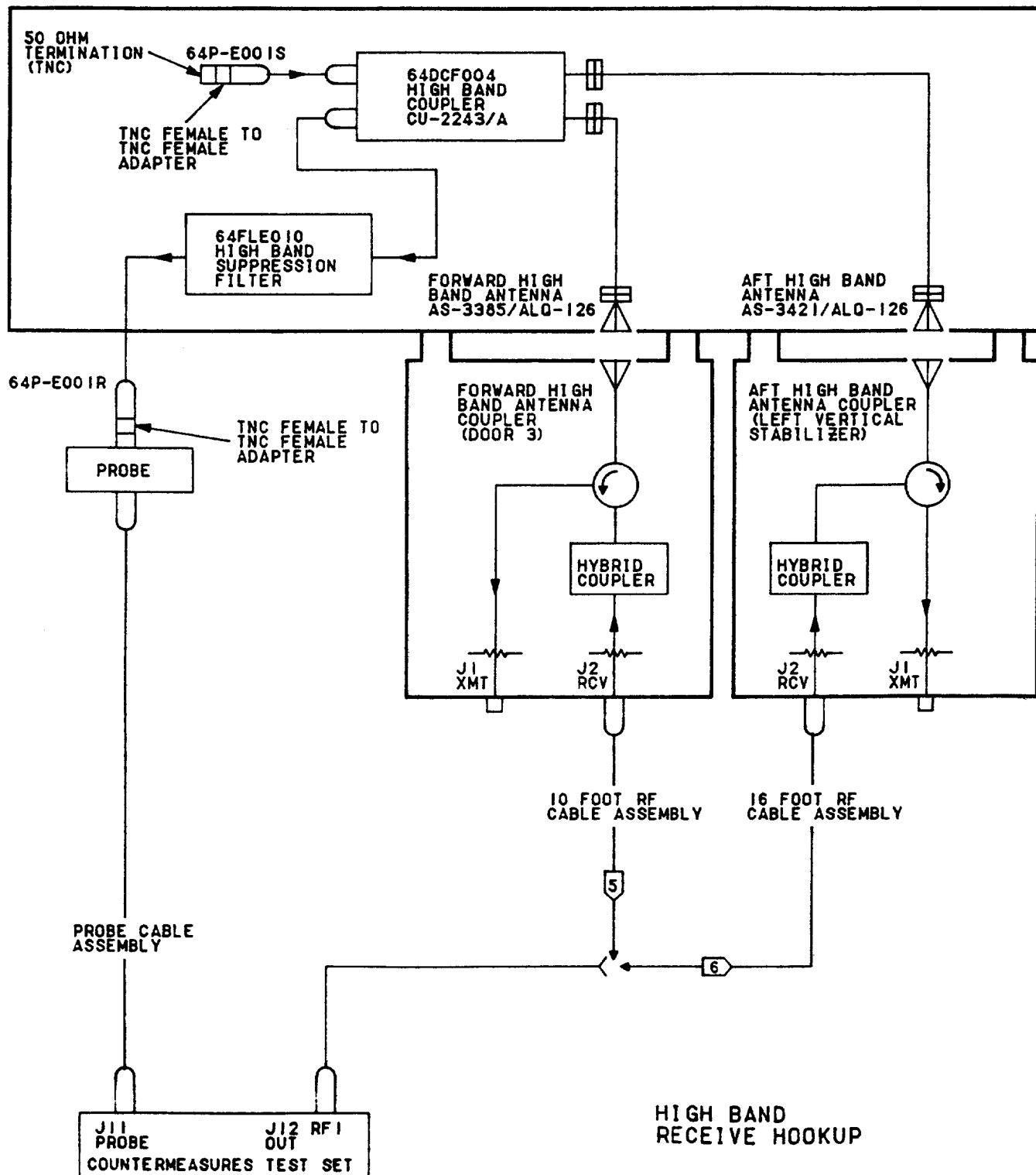


Figure 1. T3A Transmission Line Sweep Test (Sheet 3)

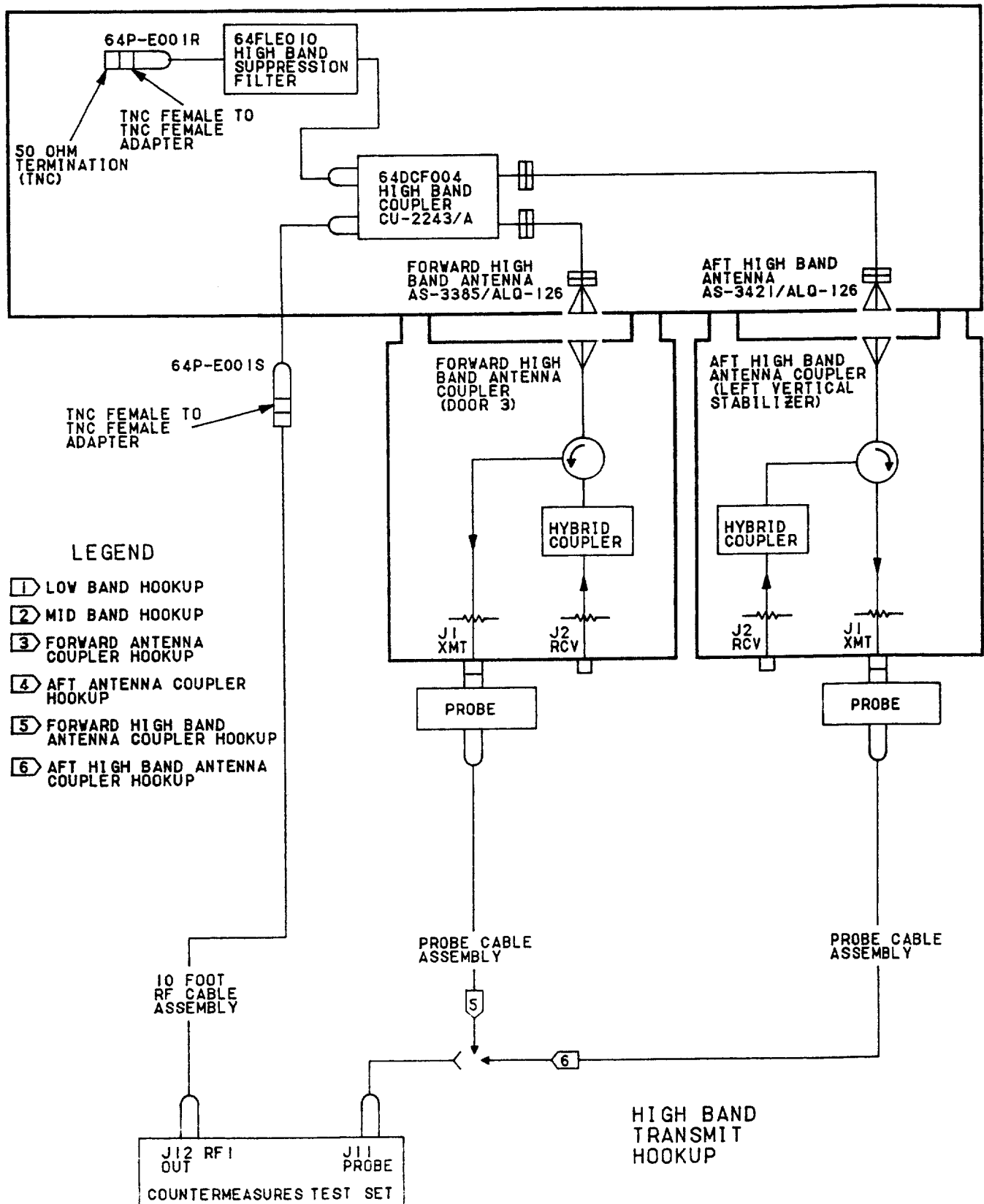


Figure 1. T3A Transmission Line Sweep Test (Sheet 4)

**THIS PAGE INTENTIONALLY LEFT BLANK.**

---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**T4 NARROW BAND POWER TEST**  
**COUNTERMEASURES SET**

---

**Reference Material**

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Tactical Electronic Warfare System .....	A1-F18AC-760-200
Locator .....	WP015 00
Functional Test .....	WP025 00

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Introduction .....	1
Narrow Band Power Test .....	1
Table 1. T4 Narrow Band Power Test .....	2
Table 2. RPT Lights Do Not Flicker .....	11
Table 3. Test Set RPT Light Does Not Flicker .....	12
T4 Narrow Band Power Test, Figure 1 .....	13

**Record of Applicable Technical Directives**

None

**1. INTRODUCTION.**

2. When T4 is being done as a result of requirements from Daily/Servicing/Special Condition Maintenance Requirement Cards (A1-F18AC-MRC-200), each band (low, mid and high) must be tested. For this test, the forward antenna couplers were used. The operator may do the test using the aft low and mid band antenna couplers, if desired.

**3. NARROW BAND POWER TEST.**

4. During testing, the Receiver-Transmitter RT-1079( )/ALQ-126 (ALQ-126 receiver-transmitter) is to be tested at an operator selected frequency near the lower and upper band limits in each band.

5. The test has three modes: TUNE, YIG, and TEST. During the TUNE mode, the countermeasures test set (test set) will display:

- a. band lower limit frequency (upper left)

- b. test set output frequency (upper middle)

- c. band upper limit frequency (upper right)

- d. TUNE (lower left)

- e. RPT (lower right)

6. During the TUNE mode, a flickering RPT light on the test set indicates the ALQ-126 receiver-transmitter is responding to the stimulus produced by the test set.

7. The test set output frequency is selected by using the MAN ADJUST control knob. When the desired output frequency is selected, pressing the ENT switch sets that frequency and the test set stores a wide band power sample.

8. During the YIG mode, the upper part of the display will remain the same and the lower part will display:

- a. YIG (lower left)

- b. insertion loss thru YIG filter in dB (lower right)

9. The YIG filter is tuned to the output frequency by using the YIG ADJUST control. The YIG filter is properly tuned when minimum insertion loss is indicated (typically 4 to 8 dB). Pressing the ENT switch causes the test set to start the TEST mode.

10. During the TEST mode, the upper part of the display will remain the same and the lower part will display:

a. TEST (lower left)

b. difference between wide band power and narrow band power (lower right)

11. During the TEST mode, the test set compares the difference between the stored wide band power sample
- (without the YIG filter) and the narrow band power (through the YIG filter). Excessive differences are caused by a faulty ALQ-126 receiver-transmitter TWT loop.

12. Mistuning can be verified by returning the YIG ADJUST control to either side of the output frequency to see if the difference reading between wide and narrow band reduces to an acceptable level. If so, this is an indication that the YIG filter was not properly tuned to the output frequency.

13. Wide band/narrow band power comparison, with operator input of frequency limits, may be done by entering T4 and the option code R.

Table 1. T4 Narrow Band Power Test

Procedure	Normal Indication	Remedy for Abnormal Indication
<div>System Required Components</div> <div>All system components installed.</div> <div>Related Systems Required</div> <div>Avionics Cooling System</div> <div>Electrical System</div> <div>Support Equipment Required</div> <div><div>Part Number or Type Designation</div><div>3036600G1</div><div>3048500G1</div><div>Nomenclature</div><div>Test Coupler Set</div><div>Countermeasures Test Set</div></div> <div>Materials Required</div> <div>None</div> <div>NOTE</div> <div>For component locator, refer to WP015 00.</div>		
<div>1. PRELIMINARY.<div><div>a. Connect intercommunication equipment (A1-F18AC-LMM-000).</div><div>b. Do Antenna Coupler Installation (WP025 00).</div></div></div>		

Table 1. T4 Narrow Band Power Test (Continued)

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>c. Apply electrical power (A1-F18AC-LMM-000).</p> <p>d. On GND PWR control panel assembly, set and hold 3 and 4 switch to A ON for three seconds.</p> <p>e. On ECM control panel assembly, set ECM mode switch to STBY.</p> <p>f. Do Initial Setup (WP025 00).</p> <p>2. LOW BAND.</p> <p>a. Connect test set to forward low band antenna coupler (fig 1).</p> <p>b. On ECM control panel assembly, set ECM mode switch to RPT.</p> <p>c. On test set, do the substeps below:</p> <p>(1) On keyboard, press switches in listed sequence; T, 4 and ENT.</p> <p>(2) When display indicates BAND????, press keyboard L, then ENT switches.</p>	<p>Switches remain on (latched).</p> <p>On LH advisory and threat warning indicator panel, STBY light comes on. Light goes off in approximately 4 minutes.</p>	<p>1. If switches unlatch in 10 to 30 seconds, apply external cooling air to aircraft.</p> <p>2. If switches do not remain on, troubleshoot (A1-F18AC-420-200, WP006 00).</p> <p>Do Countermeasures Set Built-In Test (WP014 00).</p>
<p style="text-align: center;"><b>NOTE</b></p> <p>Lower limit of band being tested is displayed in upper left part of display. Test set output frequency is displayed in upper middle part of display.</p> <p>The frequency to be tested should be near the lower limit of the band being tested.</p>		
<p>(3) Rotate MAN ADJUST control while observing upper middle part of display. Tune test set output frequency to the desired test frequency.</p>	<p>On LH advisory and threat warning indicator panel and on test set (lower right part of display), RPT light occasionally flickers.</p>	<p>1. If RPT light on both the LH advisory and threat warning indicator panel and the test set do not occasionally flicker, do table 2.</p> <p>2. If RPT light on LH advisory and threat warning indicator panel flickers and test set RPT light does not flicker, do table 3.</p>

Table 1. T4 Narrow Band Power Test (Continued)

Procedure	Normal Indication	Remedy for Abnormal Indication
(4) Press keyboard ENT switch.		3. If test set RPT light flickers and RPT light does not flicker on LH advisory and threat warning indicator panel, do Receiver-Transmitter RT-1079( )/ALQ-126 Built-In Test (WP014 00).
<p style="text-align: center;"><b>NOTE</b></p> <p>Insertion loss thru the YIG filter is displayed on lower right part of display. The display will lock when the YIG loss becomes too large.</p>		
(5) Rotate YIG ADJUST control while observing the lower right part of display. Tune YIG filter for minimum insertion loss.		
<p style="text-align: center;"><b>NOTE</b></p> <p>The difference between wide-band and narrow-band power is displayed in lower right part of display.</p>		
(6) Press keyboard ENT switch and observe lower right part of display.	Display indicates 3 dB or less and remains stable for a minimum of 10 seconds.	1. If display indicates a reading larger than 3 dB, observe display and retune YIG filter by adjusting YIG ADJUST control. If reading is still larger than 3 dB, replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00).  2. If display indicates a lower reading that slowly increases and then snaps back, replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00).
(7) Press keyboard ENT switch.		
<p style="text-align: center;"><b>NOTE</b></p> <p>Upper limit of band being tested is displayed in upper right part of display. Test set output frequency is displayed in upper middle part of display. The frequency to be tested should be near the upper limit of the band being tested.</p>		
(8) Rotate MAN ADJUST control while observing upper middle part of display. Tune test set output frequency to the desired test frequency.	On LH advisory and threat warning indicator panel and on test set (lower right part of display), RPT light occasionally flickers.	



Table 1. T4 Narrow Band Power Test (Continued)

Procedure	Normal Indication	Remedy for Abnormal Indication
(9) Press keyboard ENT switch.		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Insertion loss thru the YIG filter is displayed on lower right part of display. The display will lock when the YIG loss becomes too large.</p>		
(10) Rotate YIG ADJUST control while observing the lower right part of display. Tune YIG filter for minimum insertion loss.		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">The difference between wide-band and narrow-band power is displayed in lower right part of display.</p>		
(11) Press keyboard ENT switch and observe lower right part of display.	Display indicates 3 dB or less and remains stable for a minimum of 10 seconds.	<p>1. If display indicates a reading larger than 3 dB, observe display and retune YIG filter by adjusting YIG ADJUST control. If reading is still larger than 3 dB, replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00).</p> <p>2. If display indicates a lower reading that slowly increases and then snaps back, replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00).</p>
(12) Press keyboard ESC switch to return test set to TEST????.		
d. On ECM control panel assembly, set ECM mode switch to STBY.		
e. Disconnect test set from forward low band antenna coupler.		
f. If no other tests are to be done using the test set, do shutdown (WP025 00).		
3. MID BAND.		
a. Connect test set to forward mid band antenna coupler (fig 1).		
b. On ECM control panel assembly, set ECM mode switch to RPT.		

Table 1. T4 Narrow Band Power Test (Continued)

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>c. On test set, do the substeps below:</p> <p>(1) On keyboard, press switches in listed sequence; T, 4 and ENT.</p> <p>(2) When display indicates BAND????, press keyboard M, then ENT switches.</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p>Lower limit of band being tested is displayed in upper left part of display. Test set output frequency is displayed in upper middle part of display.</p> <p>The frequency to be tested should be near the lower limit of the band being tested.</p>		
<p>(3) Rotate MAN ADJUST control while observing upper middle part of display. Tune test set output frequency to the desired test frequency.</p> <p>(4) Press keyboard ENT switch.</p>	<p>On LH advisory and threat warning indicator panel and on test set (lower right part of display), RPT light occasionally flickers.</p>	<p>1. If RPT light on both the LH advisory and threat warning indicator panel and the test set do not occasionally flicker, do table 2.</p> <p>2. If RPT light on LH advisory and threat warning indicator panel flickers and test set RPT light does not flicker, do table 3.</p> <p>3. If test set RPT light flickers and RPT light does not flicker on LH advisory and threat warning indicator panel, do Receiver-Transmitter RT-1079( )/ALQ-126 Built-In Test (WP014 00).</p>
<p style="text-align: center;"><b>NOTE</b></p> <p>Insertion loss thru the YIG filter is displayed on lower right part of display. The display will lock when the YIG loss becomes too large.</p>		
<p>(5) Rotate YIG ADJUST control while observing the lower right part of display. Tune YIG filter for minimum insertion loss.</p>		

**Table 1. T4 Narrow Band Power Test (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p style="text-align: center;"><b>NOTE</b></p> <p>The difference between wide-band and narrow-band power is displayed in lower right part of display.</p>		
<p>(6) Press keyboard ENT switch and observe lower right part of display.</p>	<p>Display indicates 3 dB or less and remains stable for a minimum of 10 seconds.</p>	<p>1. If display indicates a reading larger than 3 dB, observe display and retune YIG filter by adjusting YIG ADJUST control. If reading is still larger than 3 dB, replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00).</p> <p>2. If display indicates a lower reading that slowly increases and then snaps back, replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00).</p>
<p>(7) Press keyboard ENT switch.</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p>Upper limit of band being tested is displayed in upper right part of display. Test set output frequency is displayed in upper middle part of display.</p> <p>The frequency to be tested should be near the upper limit of the band being tested.</p>		
<p>(8) Rotate MAN ADJUST control while observing upper middle part of display. Tune test set output frequency to the desired test frequency.</p>	<p>On LH advisory and threat warning indicator panel and on test set (lower right part of display), RPT light occasionally flickers.</p>	
<p>(9) Press keyboard ENT switch.</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p>Insertion loss thru the YIG filter is displayed on lower right part of display. The display will lock when the YIG loss becomes too large.</p>		
<p>(10) Rotate YIG ADJUST control while observing the lower right part of display. Tune YIG filter for minimum insertion loss.</p>		

Table 1. T4 Narrow Band Power Test (Continued)

Procedure	Normal Indication	Remedy for Abnormal Indication
<p style="text-align: center;"><b>NOTE</b></p> <p>The difference between wide-band and narrow-band power is displayed in lower right part of display.</p>		
<p>(11) Press keyboard ENT switch and observe lower right part of display.</p> <p>(12) Press keyboard ESC switch to return test set to TEST????.</p> <p>d. On ECM control panel assembly, set ECM mode switch to STBY.</p> <p>e. Disconnect test set from forward mid band antenna coupler.</p> <p>f. If no other tests are to be done using the test set, do shutdown (WP025 00).</p> <p>4. HIGH BAND.</p> <p>a. Connect test set to forward high band antenna coupler (fig 1).</p> <p>b. On ECM control panel assembly, set ECM mode switch to RPT.</p> <p>c. On test set, do the substeps below:</p> <p>(1) On keyboard, press switches in listed sequence; T, 4 and ENT.</p> <p>(2) When display indicates BAND????, press keyboard H, then ENT switches.</p>	<p>Display indicates 3 dB or less and remains stable for a minimum of 10 seconds.</p>	<p>1. If display indicates a reading larger than 3 dB, observe display retune YIG filter by adjusting YIG ADJUST control. If reading is still larger than 3 dB, replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00).</p> <p>2. If display indicates a lower reading that slowly increases and then snaps back, replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1- F18AC-760-300, WP010 00).</p>

**Table 1. T4 Narrow Band Power Test (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>NOTE</b></p> <p>Lower limit of band being tested is displayed in upper left part of display. Test set output frequency is displayed in upper middle part of display.</p> <p>The frequency to be tested should be near the lower limit of the band being tested.</p>		
<p>(3) Rotate MAN ADJUST control while observing upper middle part of display. Tune test set output frequency to the desired test frequency.</p> <p>(4) Press keyboard ENT switch.</p>	<p>On LH advisory and threat warning indicator panel and on test set (lower right part of display), RPT light occasionally flickers.</p>	<p>1. If RPT light on both the LH advisory and threat warning indicator panel and the test set do not occasionally flicker, do table 2.</p> <p>2. If RPT light on LH advisory and threat warning indicator panel flickers and test set RPT light does not flicker, do table 3.</p> <p>3. If test set RPT light flickers and RPT light does not flicker on LH advisory and threat warning indicator panel, do Receiver-Transmitter RT-1079( )/ALQ-126 Built-In Test (WP014 00).</p>
<p align="center"><b>NOTE</b></p> <p>Insertion loss thru the YIG filter is displayed on lower right part of display. The display will lock when the YIG loss becomes too large.</p>		
<p>(5) Rotate YIG ADJUST control while observing the lower right part of display. Tune YIG filter for minimum insertion loss.</p>		
<p align="center"><b>NOTE</b></p> <p>The difference between wide-band and narrow-band power is displayed in lower right part of display.</p>		
<p>(6) Press keyboard ENT switch and observe lower right part of display.</p>	<p>Display indicates 3 dB or less and remains stable for a minimum of 10 seconds.</p>	<p>1. If display indicates a reading larger than 3 dB, observe display and retune YIG filter by adjusting YIG ADJUST control. If reading is still larger than 3 dB, replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00).</p> <p>2. If display indicates a lower reading that slowly increases and then snaps back, replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00).</p>

**Table 1. T4 Narrow Band Power Test (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
(7) Press keyboard ENT switch.		
<p style="text-align: center;"><b>NOTE</b></p> <p>Upper limit of band being tested is displayed in upper right part of display. Test set output frequency is displayed in upper middle part of display.</p> <p>The frequency to be tested should be near the upper limit of the band being tested.</p>		
(8) Rotate MAN ADJUST control while observing upper middle part of display. Tune test set output frequency to the desired test frequency.	On LH advisory and threat warning indicator panel and on test set (lower right part of display), RPT light occasionally flickers.	
(9) Press keyboard ENT switch.		
<p style="text-align: center;"><b>NOTE</b></p> <p>Insertion loss thru the YIG filter is displayed on lower right part of display. The display will lock when the YIG loss becomes too large.</p>		
(10) Rotate YIG ADJUST control while observing the lower right part of display. Tune YIG filter for minimum insertion loss.		
<p style="text-align: center;"><b>NOTE</b></p> <p>The difference between wide-band and narrow-band power is displayed in lower right part of display.</p>		
(11) Press keyboard ENT switch and observe lower right part of display.	Display indicates 3 dB or less and remains stable for a minimum of 10 seconds.	<p>1. If display indicates a reading larger than 3 dB, observe display and retune YIG filter by adjusting YIG ADJUST control. If reading is still larger than 3 dB, replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00).</p> <p>2. If display indicates a lower reading that slowly increases and then snaps back, replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00).</p>
(12) Press keyboard ESC switch to return test set to TEST????.		
d. On ECM control panel assembly, set ECM mode switch to STBY.		

**Table 1. T4 Narrow Band Power Test (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
e. Disconnect test set from forward high band antenna coupler.  f. If no other tests are to be done using the test set, do shutdown (WP025 00).		

**Table 2. RPT Lights Do Not Flicker**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
3036600G1	Test Coupler Set	
3048500G1	Countermeasures Test Set	
Materials Required		
None		
Malfunction is caused by one of the items listed below:		
Receiver-Transmitter RT-1079( )/ALQ-126		
Antenna System Receive Component		
Procedure	No	Yes
a. Did abnormal indication occur during low band section of test? .....	b	c
b. Did abnormal indication occur during mid band section of test? .....	h	f
c. Do low band receive section of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	e	d
d. Replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00). ....	-	-
e. Do low band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss Test (WP020 00). ....	-	-
f. Do mid band receive section of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	g	d
g. Do mid band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss Test (WP020 00). ....	-	-
h. Do forward high band antenna receive section of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	i	d
i. Do high band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss Test (WP020 00). ....	-	-

**Table 3. Test Set RPT Light Does Not Flicker**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
3036600G1	Test Coupler Set	
3048500G1	Countermeasures Test Set	
AN/USM-406A/(V)		
Materials Required		
None		
Malfunction is caused by one of the items listed below:		
Receiver-Transmitter RT-1079( )/ALQ-126		
Antenna System Transmit Components		
Procedure	No	Yes
a. Did abnormal indication occur during low band section of test? .....	b	c
b. Did abnormal indication occur during mid band section of test? .....	l	h
c. Was forward low band antenna coupler used to do test? .....	g	d
d. Do forward low band antenna transmit section of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	f	e
e. Replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00). ....	-	-
f. Do low band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss Test (WP020 00). .....	-	-
g. Do aft low band antenna transmit section of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	f	e
h. Was forward mid band antenna coupler used to do test? .....	k	i
i. Do forward mid band antenna transmit section of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	j	e
j. Do mid band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss Test (WP020 00). .....	-	-
k. Do aft mid band antenna transmit section of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	j	e
l. Do forward high band antenna transmit section of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	m	e
m. Do high band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss Test (WP020 00). .....	-	-



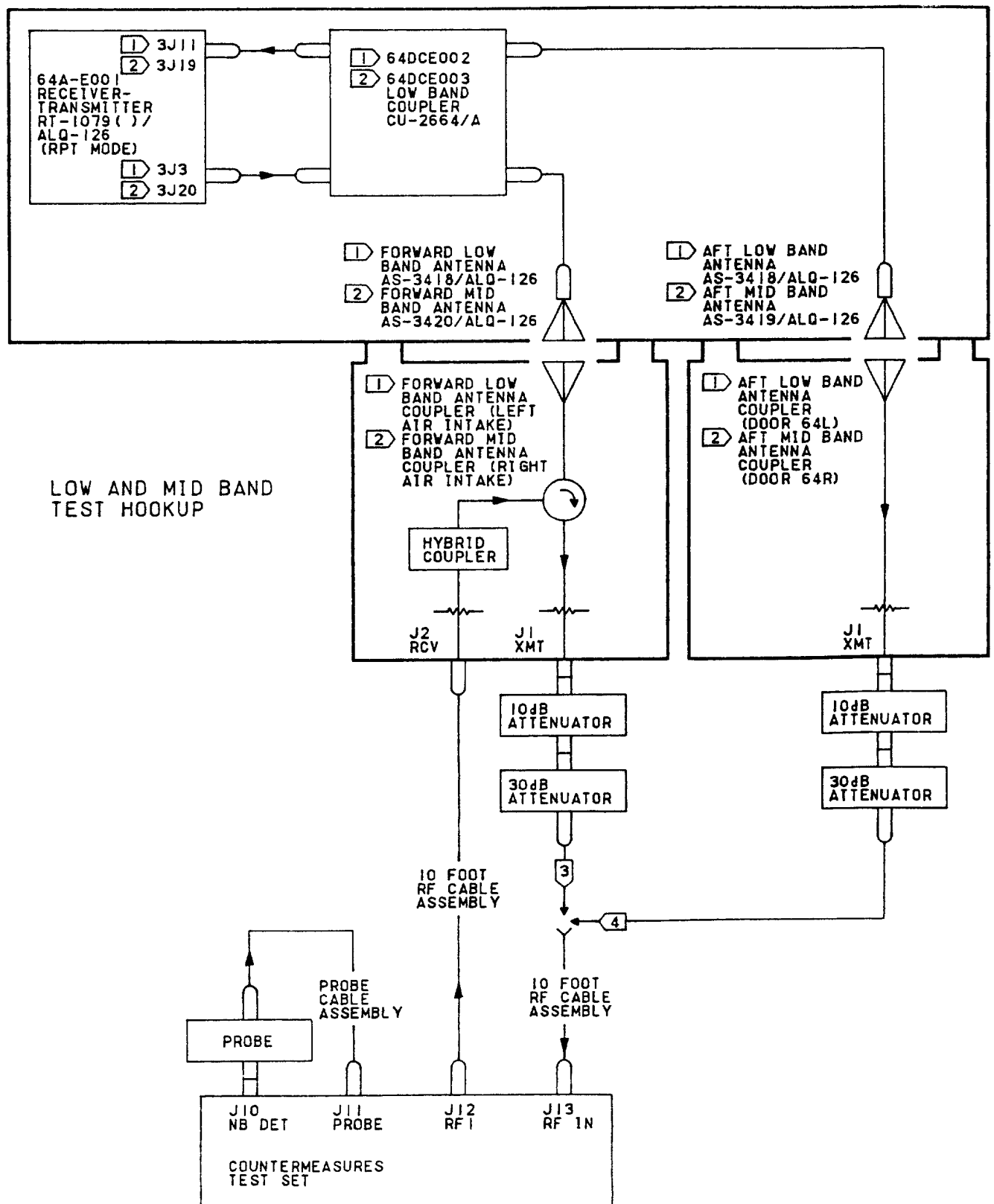


Figure 1. T4 Narrow Band Power Test (Sheet 1)

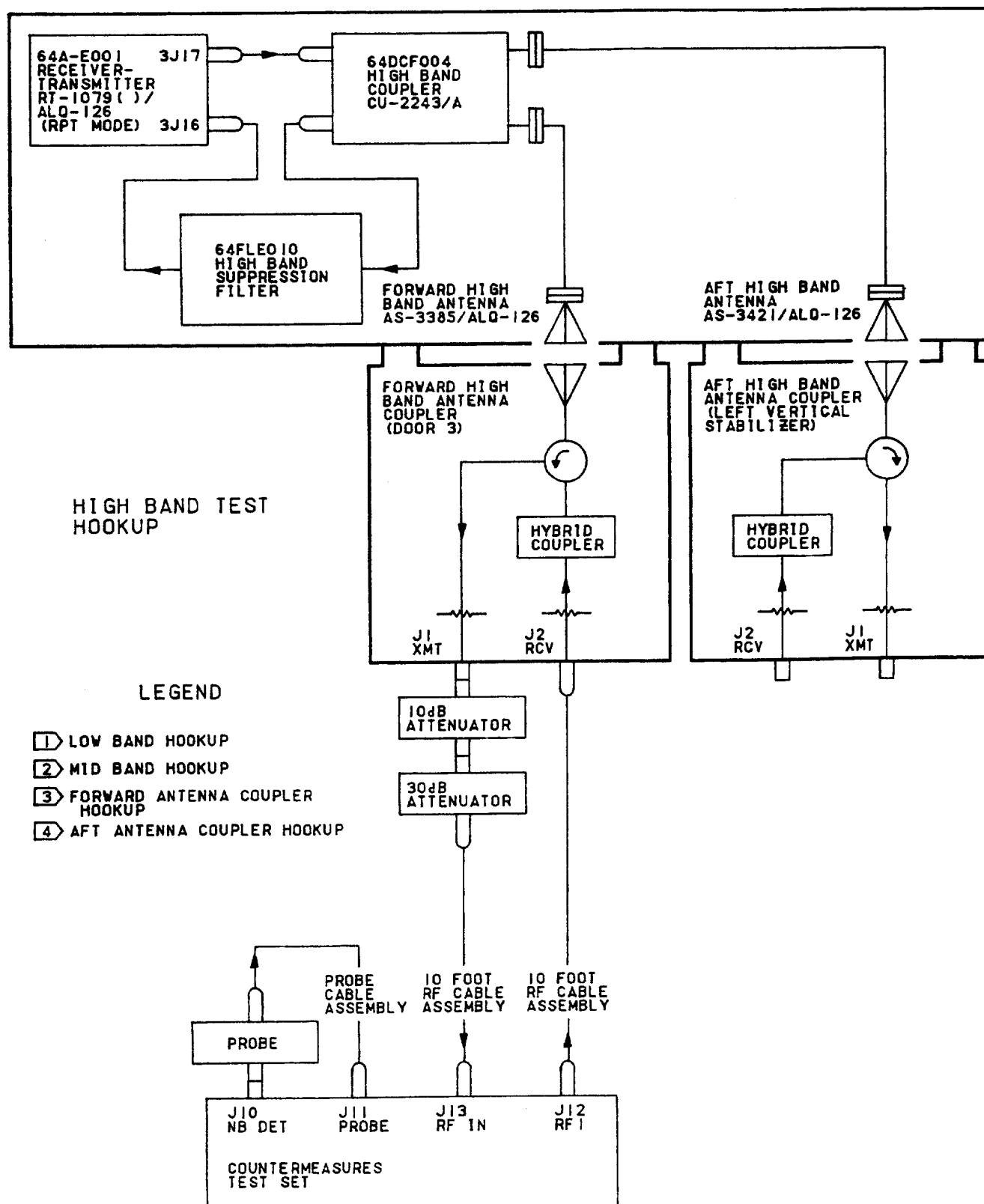


Figure 1. T4 Narrow Band Power Test (Sheet 2)

---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**T5 RECEIVER SENSITIVITY/SNAPDOWN**  
**COUNTERMEASURES SET**

---

**Reference Material**

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Tactical Electronic Warfare Systems .....	A1-F18AC-760-200
Locator .....	WP015 00
Functional Test .....	WP025 00

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Introduction .....	1
Receiver Sensitivity/Snapdown .....	1
Table 1. T5 Receiver Sensitivity/Snapdown .....	2
Table 2. Low Band TEST NOGO .....	5
Table 3. Mid Band TEST NOGO .....	6
Table 4. High Band TEST NOGO .....	6

**Record of Applicable Technical Directives**

None

**1. INTRODUCTION.**

Transmitter RT-1079( )/ALQ-126 enable time has expired. During this time, the display will indicate:

2. When T5 is being done as a result of requirements from Daily/Servicing/Special Condition Maintenance Requirement Cards (A1-F18AC-MRC-200), all bands (low, mid and high) must be tested.

a. lower limit of range in MHz or GHz above 9999 (upper left)

b. current test set output frequency in MHz or GHz above 9999 (upper middle)

3. When T5 is being done and T1 and/or T3 are also required, all tests may be done before disconnecting countermeasures test set (test set) from antenna coupler.

c. upper limit of range in MHz or GHz above 9999 (upper right)

d. RSNS (lower left)

4. When T5 is being done, as a result of troubleshooting requirements, only the band of interest must be tested.

e. WAIT (lower right)

**5. RECEIVER SENSITIVITY/SNAPDOWN.**

6. The test set waits approximately 10 seconds before beginning the sensitivity test to make sure Receiver-

7. During testing, the test set increases rf power output until the ALQ-126 receiver-transmitter responds. The calculated power level at the input to the ALQ-126 receiver-transmitter is displayed (lower right). The test set then decreases rf power output until the ALQ-126 receiver-transmitter response stops. The decrease

in power level from acquisition sensitivity point is displayed (lower left). The test set output frequency then increments to a new frequency value and waits approximately 8 seconds before beginning a new cycle.

8. Receiver sensitivity/snapdown test, with operator selected frequency range and increment, may be done by entering T5 and the option code R.

Table 1. T5 Receiver Sensitivity/Snapdown

Procedure	Normal Indication	Remedy for Abnormal Indication
<b>System Required Components</b>  All system components installed.		
<b>Related Systems Required</b>  Avionics Cooling System Electrical System		
<b>Support Equipment Required</b>		
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>	
3036600G1	Test Coupler Set	
3048500G1	Countermeasures Test Set	
<b>Materials Required</b>  None		
<b>NOTE</b>  For component locator, refer to WP015 00.		
1. PRELIMINARY.  a. Connect intercommunication equipment (A1-F18AC-LMM-000).  b. Do Antenna Coupler Installation (WP025 00).  c. Apply electrical power (A1-F18AC-LMM-000).  d. On GND PWR control panel assembly, set and hold 3 and 4 switch to A ON for three seconds.	Switches remain on (latched).	1. If switches unlatch in 10 to 30 seconds, apply external cooling air to aircraft.  2. If switches do not remain on, troubleshoot (A1-F18AC-420-200, WP006 00).

**Table 1. T5 Receiver Sensitivity/Snapdown (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>e. On ECM control panel assembly, set ECM mode switch to STBY.</p> <p>f. Do Initial Setup (WP025 00).</p> <p>2. LOW BAND.</p> <p>a. Connect test set to forward low band antenna coupler. Connect for a low band test hookup (WP025 00).</p> <p>b. On ECM control panel assembly, set ECM mode switch to RPT.</p> <p>c. On test set, do the substeps below:</p> <p>(1) On keyboard, press switches in listed sequence; T, 5 and ENT.</p> <p>(2) When display indicates ANT????, press keyboard F, L, R then ENT switches.</p> <p>(3) When display indicates LINE????, press keyboard ENT switch.</p> <p>(4) Press keyboard ESC switch to return test set to TEST????.</p>	<p>On LH advisory and threat warning indicator panel, STBY light comes on. Light goes off in approximately 4 minutes.</p> <p>At completion of test, display will indicate TEST GO.</p>	<p>Do Countermeasures Set Built-In Test (WP014 00).</p> <p>Do table 2.</p>
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If low band antenna portion of T1 and/or forward low band portion of T3 are to be done next, omit the below steps.</p>		
<p>d. On ECM control panel assembly, set ECM mode switch to STBY.</p> <p>e. Disconnect test set from forward low band antenna coupler.</p> <p>f. If no other tests are to be done using the test set, do shutdown (WP025 00).</p> <p>3. MID BAND.</p> <p>a. Connect test set to forward mid band antenna coupler. Connect for a mid band test hookup (WP025 00).</p>		

**Table 1. T5 Receiver Sensitivity/Snapdown (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>b. On ECM control panel assembly, set ECM mode switch to RPT.</p> <p>c. On test set, do the substeps below:</p> <p>(1) On keyboard, press switches in listed sequence; T, 5 and ENT.</p> <p>(2) When display indicates ANT????, press keyboard F, M, R, then ENT switches.</p> <p>(3) When display indicates LINE????, press keyboard ENT switch.</p> <p>(4) Press keyboard ESC switch to return test set to TEST????.</p>	<p>At completion of test, display will indicate TEST GO.</p>	<p>Do table 3.</p>
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If mid band antenna portion of T1 and/or forward low band portion of T3 are to be done next, omit the below steps.</p> <p>d. On ECM control panel assembly, set ECM mode switch to STBY.</p> <p>e. Disconnect test set from forward mid band antenna coupler.</p> <p>f. If no other tests are to be done using the test set, do shutdown (WP025 00).</p> <p>4. HIGH BAND.</p> <p>a. Connect test set to forward mid band antenna coupler. Connect for a high band test hookup (WP025 00).</p> <p>b. On ECM control panel assembly, set ECM mode switch to RPT.</p> <p>c. On test set, do the substeps below:</p> <p>(1) On keyboard, press switches in listed sequence; T, 5 and ENT.</p> <p>(2) When display indicates ANT????, press keyboard F, H, R, then ENT switches.</p>		

**Table 1. T5 Receiver Sensitivity/Snapdown (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
(3) When display indicates LINE????, press keyboard ENT switch.  (4) Press keyboard ESC switch to return test set to TEST?????.	At completion of test, display will indicate TEST GO.	Do table 4.
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If high band antenna portion of T1 and/or forward low band portion of T3 are to be done next, omit the below steps.</p> <p>d. On ECM control panel assembly, set ECM mode switch to STBY.</p> <p>e. Disconnect test set from forward mid band antenna coupler.</p> <p>f. If no other tests are to be done using the test set, do shutdown (WP025 00).</p>		

**Table 2. Low Band TEST NOGO**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
3036600G1	Test Coupler Set	
3048500G1	Countermeasures Test Set	
Materials Required		
None		
Malfunction is caused by one of the items listed below:		
Receiver-Transmitter RT-1079( )/ALQ-126		
ALQ-126 Mid Band RF Component		
Procedure	No	Yes
a. Do low band receive portion of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	c	b
b. Replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00). .....	-	-
c. Do a low band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss Test (WP020 00). .....	-	-

**Table 3. Mid Band TEST NOGO**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
3036600G1	Test Coupler Set	
3048500G1	Countermeasures Test Set	
Materials Required		
None		
Malfunction is caused by one of the items listed below:		
Receiver-Transmitter RT-1079( )ALQ-126		
ALQ-126 Mid Band RF Component		
Procedure	No	Yes
a. Do mid band receive portion of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	c	b
b. Replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00). .....	-	-
c. Do a mid band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss Test (WP020 00). .....	-	-

**Table 4. High Band TEST NOGO**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
3036600G1	Test Coupler Set	
3048500G1	Countermeasures Test Set	
Materials Required		
None		
Malfunction is caused by one of the items listed below:		
Receiver-Transmitter RT-1079( )/ALQ-126		
ALQ-126 Mid Band RF Component		
Procedure	No	Yes
a. Do forward high band antenna receive portion of T3A (WP028 00). At completion of test, was TEST GO displayed? .....	c	b
b. Replace Receiver-Transmitter RT-1079( )/ALQ-126 (A1-F18AC-760-300, WP010 00). .....	-	-
c. Do a high band AN/ALQ-126 Line/Antenna Return Loss and Insertion Loss Test (WP020 00). .....	-	-



---

ORGANIZATIONAL MAINTENANCE  
TESTING AND TROUBLESHOOTING  
TESTING - BUILT-IN TEST  
COUNTERMEASURES WARNING AND CONTROL SYSTEM  
EFFECTIVITY: 161702 AND UP

---

**Reference Material**

Line Maintenance Procedures ..... A1-F18AC-LMM-000

**Alphabetical Index**

Subject	Page No.
Built-In Test Status Displays, Figure 1 .....	10
Special Built-In Test, Figure 2 .....	16
Table 1. Radar Warning System Built-In Test .....	1

**Record of Applicable Technical Directives**

None

**Table 1. Radar Warning System Built-In Test**

Procedure	Normal Indication	Remedy for Abnormal Indication
<b>System Required Components</b>		
All system components installed.		
<b>Related Systems Required</b>		
Avionics Cooling System		
Electrical System		
Intercommunications and Audio System		
Maintenance Status Display and Recording System		
Mission Computer System		
Multipurpose Display Group		
Radar System		
<b>Support Equipment Required</b>		
None		
<b>Materials Required</b>		
None		

**Table 1. Radar Warning System Built-In Test (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>NOTE</b></p> <p>If a malfunction occurs during this test, make sure circuit breakers shown in WP032 00 are closed.</p> <p>For component locator, refer to WP032 00.</p>		
<p>1. PRELIMINARY.</p> <p>a. Observe WPN SYS FAIL Indicator on Digital Display Indicator ID-2150/ASM-612 in nose wheelwell.</p> <p>b. Connect cockpit intercommunication equipment (A1-F18AC-LMM-000).</p> <p>c. On F/A-18B, connect rear cockpit intercommunication equipment (A1-F18AC-LMM-000).</p> <p>d. Apply electrical power (A1-F18AC-LMM-000).</p> <p>e. On GND PWR control panel assembly, set and hold 1, 2, and 4 switches to A ON and 3 switch to B ON for three seconds.</p>	<p>WPN SYS FAIL indicator is black (not latched).</p> <p>Switches remain on (latched).</p>	<p>If latched, do built-in test/reset procedure (A1-F18AC-LMM-000).</p> <p>1. If switches unlatch in 10 to 30 seconds, apply external cooling air to aircraft.</p> <p>2. If switches do not remain on, troubleshoot (A1-F18AC-420-200, WP006 00).</p>
<p align="center"><b>NOTE</b></p> <p>If Receiver-Transmitter RT-1079B/ALQ-126 is not installed, omit step f.</p>		
<p>f. On ECM control panel assembly, set ECM mode switch to STBY.</p>	<p>On LH advisory and threat warning indicator panel STBY light comes on. Light goes off in approximately 4 minutes.</p>	<p>Do Countermeasures Set Built-In Test, WP014 00.</p>

Table 1. Radar Warning System Built-In Test (Continued)

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>g. On left and right Digital Display Indicator IP-1317( ) (LDDI and RDDI), set power switch to DAY or NIGHT. Allow 2 minutes for warm-up, and adjust BRT and CONT controls for best display.</p>	<p>1. LDDI and RDDI have displays and center pushbutton switch on bottom row is labeled MENU.</p>	<p>1. No display on LDDI F/A-18A, do table 1 (A1-F18AC-745-200, WP006 00), F/A-18B, do table 1 (A1-F18AC-745-200, WP007 00).</p> <p>2. No display on RDDI F/A-18A, do table 2 (A1-F18AC-745-200, WP006 00), F/A-18B, do table 2 (A1-F18AC-745-200, WP007 00).</p> <p>3. If STANDBY is displayed on LDDI or RDDI, replace left or right Digital Display Indicator IP-1317( ) (A1-F18AC-745-300, WP004 00).</p> <p>4. If BRT or CONT controls do not affect display, replace left or right Digital Display Indicator IP-1317( ) (A1-F18AC-745-300, WP004 00).</p>
	<p>2. LDDI has caution and advisory display.</p>	<p>Replace left Digital Display Indicator IP-1317( ) (A1-F18AC-745-300, WP004 00).</p>
<p>h. On RDDI, press MENU pushbutton switch.</p>	<p>RDDI has MENU display.</p>	<p>Replace right Digital Display Indicator IP-1317( ) (A1-F18AC-745-300, WP004 00).</p>
<p>i. On intercommunication amplifier-control, set RWR VOL control to mid position.</p>		
<p>j. On F/A-18B, on volume control panel assembly, set RWR VOL control to mid position.</p>		
<p>k. On Control-Indicator C-10250/ALR-67(V), set DMR switch to mid position.</p>		
<p>l. Set DIS TYPE switch to the A position.</p>		

Table 1. Radar Warning System Built-In Test (Continued)


Procedure	Normal Indication	Remedy for Abnormal Indication
2. PROCEDURE.		
<div style="text-align: center;">  <p>CAUTION</p> </div> <p>When ambient air temperature is over 80° F, limit the ALR-67 system power on time to 5 minutes. Overheat and possible damage may occur to the Countermeasures Computer CP-1293( )/ALR-67(V) or Radar Receiver R-2055A/ALR-67(V).</p>		
<p>a. On BUNO 162394 through 163175 after F/A-18 AFC-292, on SNSR Pod Control Box Panel Assembly, set Radar Switch to STBY.</p> <p>a.1. On Control-Indicator C-10250/ALR-67(V) (control-indicator), press release POWER ON switch.</p>	<p>1. POWER ON light comes on.</p> <p>2. BIT, OFFSET, DISPLAY and SPECIAL lights come on.</p> <p>3. Forward Azimuth Indicator IP-1276/ALR-67(V) (azimuth indicator) has status and emitter display (fig 1, detail A).</p> <p>4. On F/A-18B, rear Azimuth Indicator IP-1276/ALR-67(V) (rear azimuth indicator) has status and emitter display (fig 1, detail A).</p>	<p>Do table 1, WP033 00.</p> <p>Replace Control Indicator C-10250/ALR-67(V) (A1-F18AC-760-300, WP056 00).</p> <p>1. No display on azimuth indicator. Do table 2, WP033 00.</p> <p>2. Priority display cycles A to N continuously. Do substeps below:</p> <p>a. Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).</p> <p>b. On Radar Receiver R-2055A/ALR-67(V), if circuit breaker CB1 is in OFF position (tripped), do step (c). If CB1 is in ON position, do table 5, WP034 00.</p> <p>c. Reset CB1 and install Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP064 00). If malfunction still exists, do table 5, WP034 00.</p> <p>3. Azimuth indicator displays flashing B. Do table 5, WP033 00.</p> <p>1. No display on rear azimuth indicator. Do table 5, WP033 00.</p> <p>2. Rear azimuth indicator displays flashing B. Do table 5, WP033 00.</p>

Table 1. Radar Warning System Built-In Test (Continued)

Procedure	Normal Indication	Remedy for Abnormal Indication
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Allow approximately 3 minutes for system warmup.</p>		
b. On RDDI, press BIT pushbutton switch.	<p>1. RDDI has BIT control display (fig 1, detail L).</p> <p>2. RWR BIT status, displays GO.</p>	<p>Replace right Digital Display Indicator IP-1317( ) (A1-F18AC-745-300, WP004 00).</p> <p>1. RWR BIT status displays OH or DEGD OH. Do the substeps below:</p> <p style="margin-left: 40px;">a. On the control-indicator, press and release BIT, then SPECIAL pushbutton switches.</p> <p style="margin-left: 40px;">b. On azimuth indicator, read and record special BIT display.</p> <p style="margin-left: 40px;">c. On control-indicator, press and release POWER ON pushbutton switch.</p> <p style="margin-left: 40px;">d. Use figure 2 to interpret special BIT display. Do table 4, WP033 00.</p> <p>2. RWR BIT status displays DEGD or NOT RDY. Do the substeps below:</p> <p style="margin-left: 40px;">a. Read and record maintenance codes on Digital Display Indicator ID-2150/ASM-612 in nose wheelwell (A1-F18AC-LMM-000).</p> <p style="margin-left: 40px;">b. If code 020 exists, do table 3, WP033 00.</p>
c. On azimuth indicator, adjust INT control for best display.	Status and emitter display varies in contrast.	Replace forward Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00).
d. On F/A-18B, on rear azimuth indicator, adjust INT control for best display.	Status and emitter display varies in contrast.	Replace rear Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00).

Table 1. Radar Warning System Built-In Test (Continued)

Procedure	Normal Indication	Remedy for Abnormal Indication
<p style="text-align: center;"><b>NOTE</b></p> <p>BIT display can be enabled more than once to record failures. Reenabling the BIT display sequence is inhibited for two seconds from the previous BIT display enabling.</p> <p>BIT display sequence normally lasts over 10 seconds, but can be stopped in progress by pressing the BIT pushbutton switch.</p> <p>To enable special BIT display, the SPECIAL pushbutton switch on the control-indicator must be pressed and released while BIT status page 1 is being displayed. Use figure 2 to interpret special BIT display.</p>		
e. On control-indicator, press and release BIT switch. Vary cockpit RWR VOL control when audio exists in headset. On F/A-18B, vary rear cockpit RWR VOL control when audio exists in headset.	<p>1. For approximately 2 seconds:</p> <p>a. Azimuth indicator has BIT status page 1 display (fig 1, detail B).</p> <p>b. On F/A-18B, rear azimuth indicator has BIT status page 1 display (fig 1, detail B).</p> <p>c. Status change tone in headset and audio level varies as RWR VOL control is adjusted.</p> <p>d. On F/A-18B, status change tone is heard in rear cockpit and audio level varies as rear RWR VOL control is adjusted.</p> <p>e. On control-indicator, ENABLE FAIL lights come on.</p> <p>f. On RH advisory and threat warning indicator panel, AAA, SAM, CW and AI lights come on.</p>	<p>Do the substeps listed below:</p> <p>a. On control-indicator, press and release SPECIAL pushbutton switch.</p> <p>b. On azimuth indicator, read and record special BIT display.</p> <p>c. Do table 1, WP035 00.</p> <p>Replace rear Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00).</p> <p>1. No audio. Do table 1, WP034 00.</p> <p>2. Cockpit audio not variable. Replace intercommunication amplifier-control (A1-F18AC-600-300, WP012 00).</p> <p>1. No audio at headset in rear cockpit. Replace intercommunication amplifier-control (A1-F18AC-600-300, WP012 00).</p> <p>2. Audio not variable in rear cockpit. Do table 2, WP034 00.</p> <p>Do table 3, WP034 00.</p> <p>Do table 4, WP034 00.</p>

Table 1. Radar Warning System Built-In Test (Continued)

Procedure	Normal Indication	Remedy for Abnormal Indication
	<p>2. For approximately 1 second:</p> <p>a. Azimuth indicator has BIT status page 3 display (fig 1, detail E).</p> <p>b. On F/A-18B, rear azimuth has BIT status page 3 display.</p> <p>c. Special alert tone in headset.</p> <p>3. For approximately 1 second:</p> <p>a. Azimuth indicator has BIT status page 4 display (fig 1, detail F).</p> <p>b. On F/A-18B, rear azimuth indicator has BIT status page 4 display.</p> <p>c. MA tone in headset.</p>	<p>1. BIT status page 2 (fig 1, detail D) displayed. Do substeps below:</p> <p>a. 126 or 126 D displayed. Do table 2, WP035 00.</p> <p>b. HRM, HRM V or HRM C displayed. Do table 3, WP035 00.</p> <p>c. IB displayed. Do table 4, WP035 00.</p> <p>2. No display. Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00).</p> <p>3. Part of display exists. Replace forward Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00).</p> <p>Replace rear Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00).</p> <p>Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00).</p> <p>1. No display. Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00).</p> <p>2. Part of display exists. Replace forward Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00).</p> <p>Replace rear Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00).</p> <p>Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00).</p>

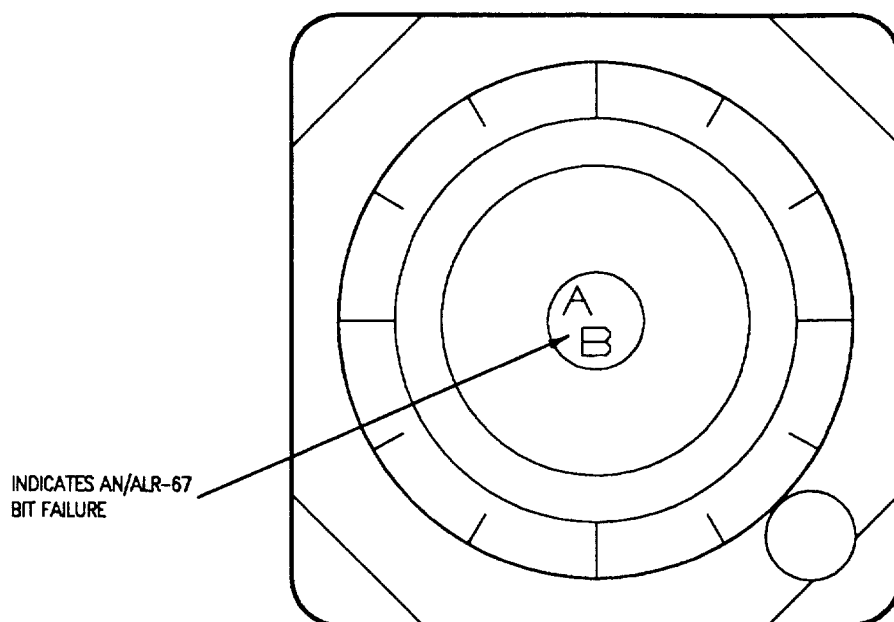
Table 1. Radar Warning System Built-In Test (Continued)

Procedure	Normal Indication	Remedy for Abnormal Indication
	<p>4. For approximately 1 second:</p> <p>a. Azimuth indicator has BIT status page 5 display (fig 1, detail G).</p> <p>b. On F/A-18B, rear azimuth indicator has BIT status page 5 display.</p> <p>c. ML tone in headset.</p> <p>5. For approximately 1 second:</p> <p>a. Azimuth indicator has BIT status page 6 display (fig 1, detail H).</p> <p>b. On F/A-18B, rear azimuth indicator has BIT status page 6 display.</p> <p>6. For approximately 1 second:</p> <p>a. Azimuth indicator has BIT status page 7 display (fig 1, detail J).</p> <p>b. On F/A-18B, rear azimuth indicator has BIT status page 7 display.</p>	<p>1. No display. Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00).</p> <p>2. Part of display exists. Replace forward Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00).</p> <p>Replace rear Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00).</p> <p>Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00).</p> <p>1. No display. Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00).</p> <p>2. Part of display exists. Replace forward Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00).</p> <p>Replace rear Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00).</p> <p>1. No display. Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00).</p> <p>2. Part of display exists. Replace forward Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00).</p> <p>Replace rear Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00).</p>



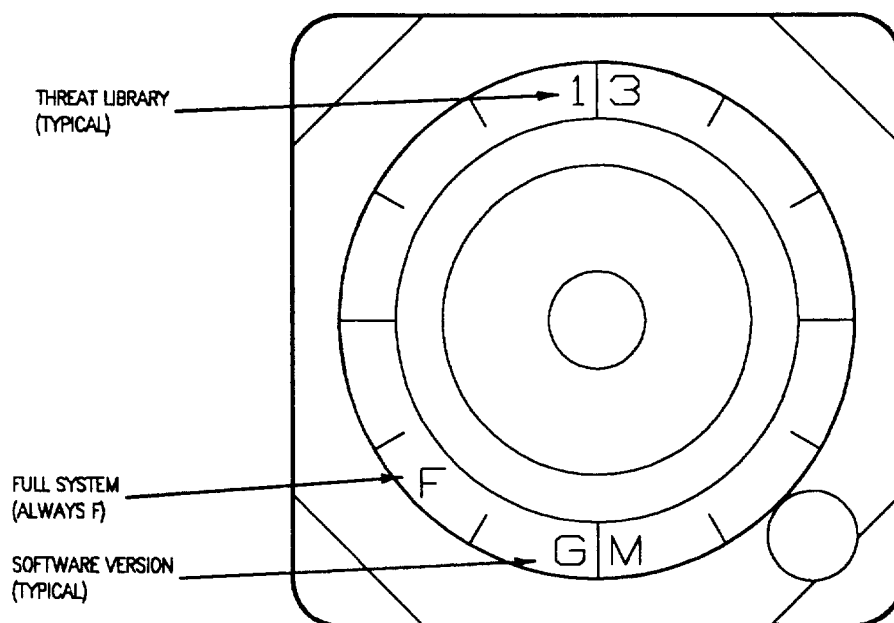
Table 1. Radar Warning System Built-In Test (Continued)

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>7. For approximately 1 second:</p> <p>a. Azimuth indicator has BIT status page 8 display (fig 1, detail K).</p> <p>b. On F/A-18B, rear azimuth indicator has BIT status page 8 display.</p> <p>8. Azimuth indicator has status and emitter display (fig 1, detail A).</p> <p>9. On F/A-18B, rear azimuth indicator has status and emitter display.</p> <p>3. FINAL.</p> <p>a. On control-indicator, press and release POWER ON switch.</p>	<p>1. No display. Replace Countermeasures Computer CP-1293( )/ALR- 67(V) (A1-F18AC-760-300, WP055 00).</p> <p>2. Part of display exists. Replace forward Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00).</p> <p>Replace rear Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00).</p> <p>Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00).</p> <p>Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00).</p>	
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If Receiver-Transmitter RT-1079B/ALQ-126 is not installed, omit step b.</p>		
<p>b. On ECM control panel assembly, set ECM mode switch to OFF.</p> <p>c. On left and right Digital Display Indicator IP-1317( ), set power switch to OFF.</p> <p>d. Remove electrical power (A1-F18AC-LMM-000).</p> <p>e. Disconnect intercommunication equipment (A1-F18AC-LMM-000).</p> <p>f. Observe Digital Display Indicator ID-2150/ASM-612 in nose wheel-well.</p>	<p>WPN SYS FAIL indicator is black (not latched).</p>	<p>Read, record and then reset maintenance codes (A1-F18AC-LMM-000).</p>



STATUS AND  
EMITTER DISPLAY

A



BIT STATUS PAGE 1

(NO FAILURES DETECTED)  
● DISPLAYED FOR 1.5 SECONDS  
● STATUS CHANGE TONE

B

Figure 1. Built-In Test Status Displays (Sheet 1)

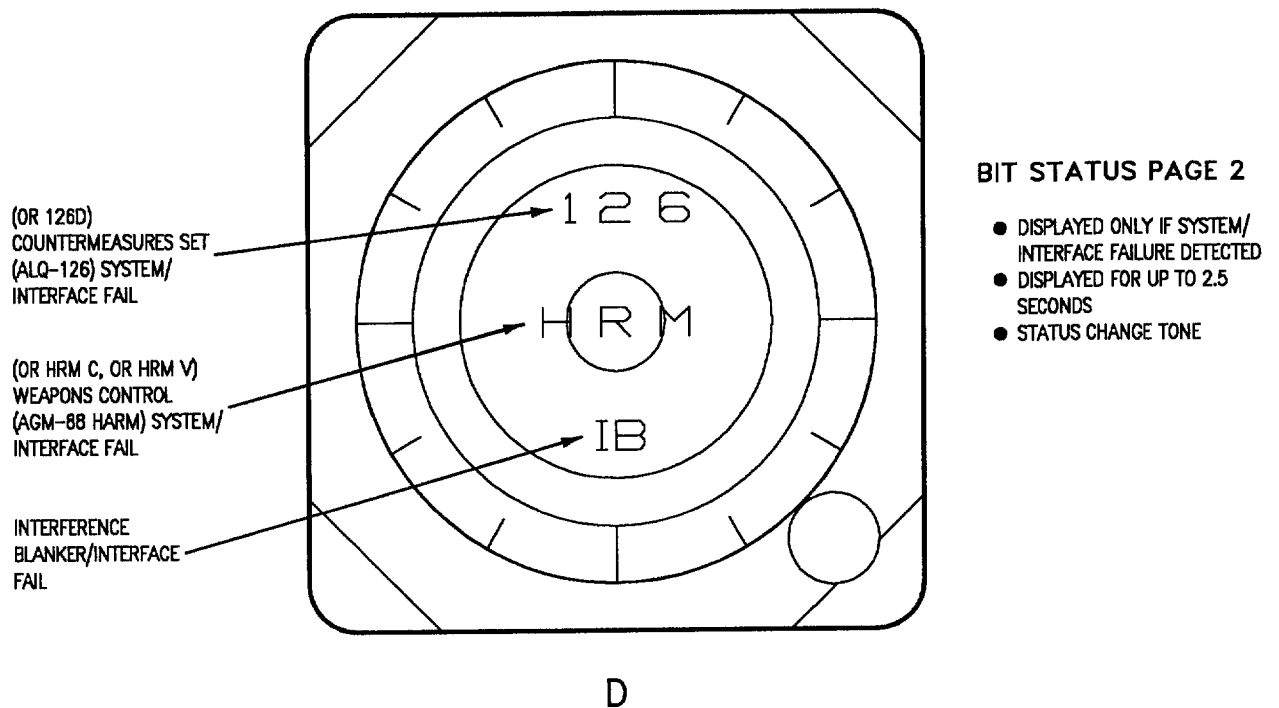
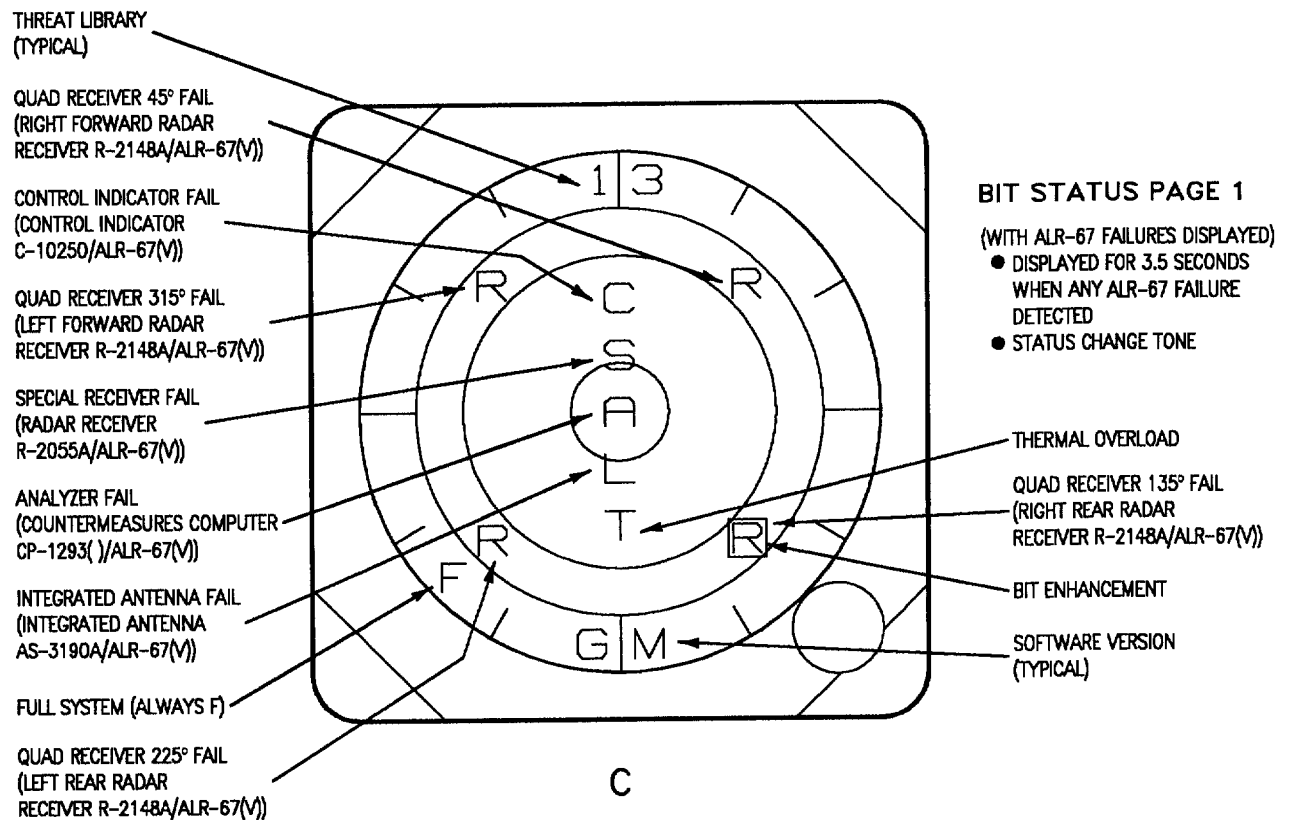
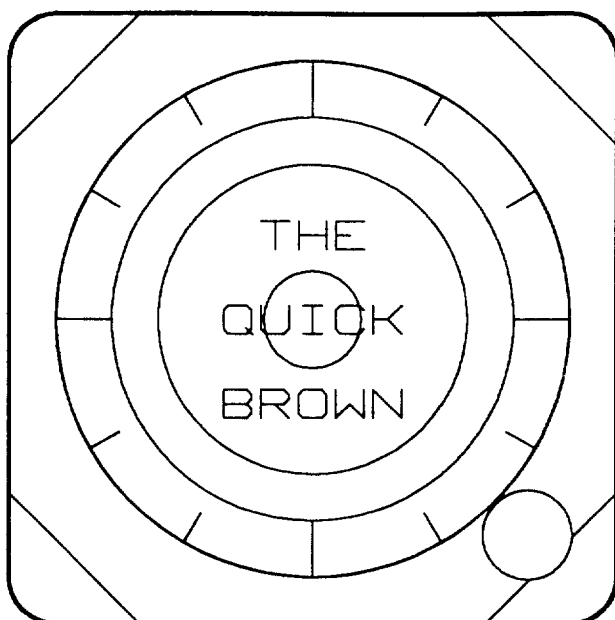


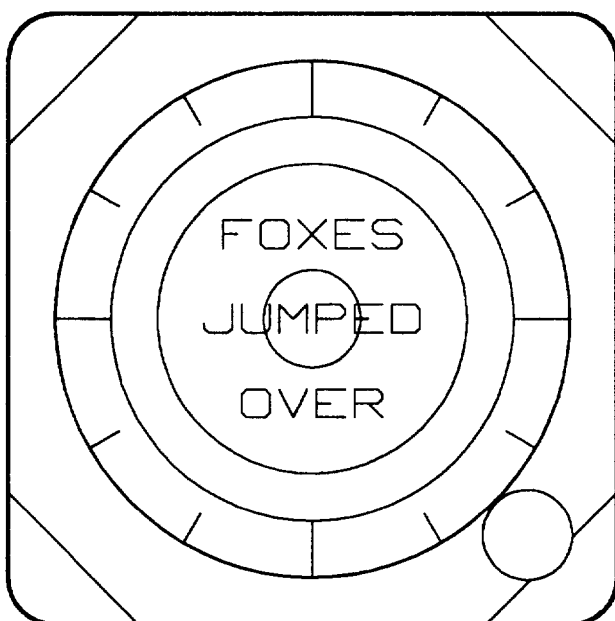
Figure 1. Built-In Test Status Displays (Sheet 2)



E

## BIT STATUS PAGE 3

- FIXED FORMAT
- DISPLAYED FOR 1.2 SECONDS
- SPECIAL TONE

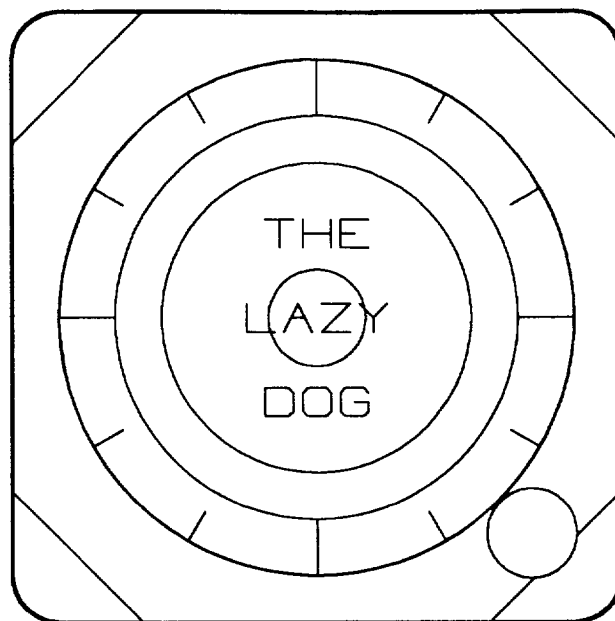


F

## BIT STATUS PAGE 4

- FIXED FORMAT
- DISPLAYED FOR 1.2 SECONDS
- MA TONE

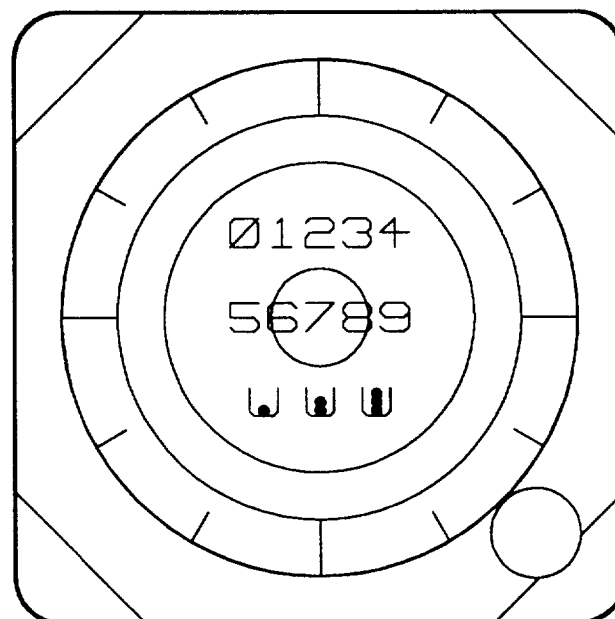
Figure 1. Built-In Test Status Displays (Sheet 3)



G

BIT STATUS PAGE 5

- FIXED FORMAT
- DISPLAYED FOR 1.2 SECONDS
- ML TONE

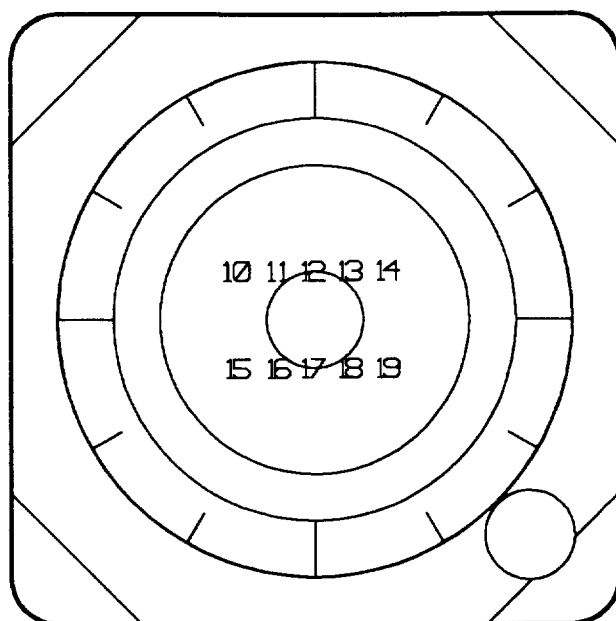


H

BIT STATUS PAGE 6

- FIXED FORMAT
- DISPLAYED FOR 1.2 SECONDS

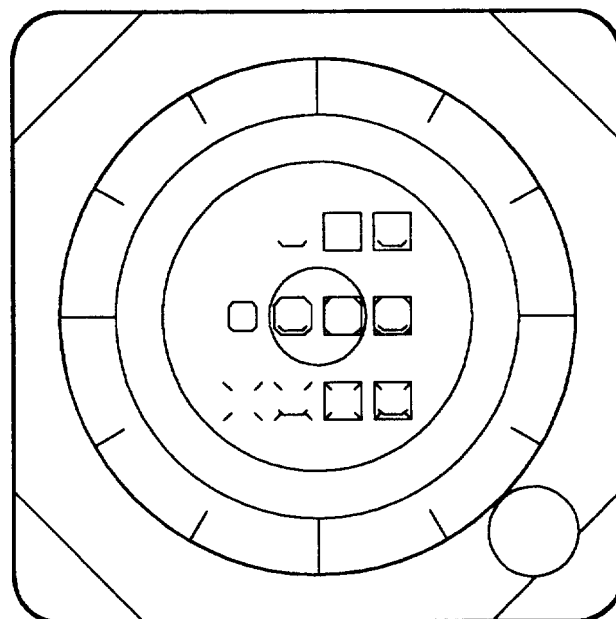
Figure 1. Built-In Test Status Displays (Sheet 4)



## BIT STATUS PAGE 7

- FIXED FORMAT
- DISPLAYED FOR 1.2 SECONDS

J

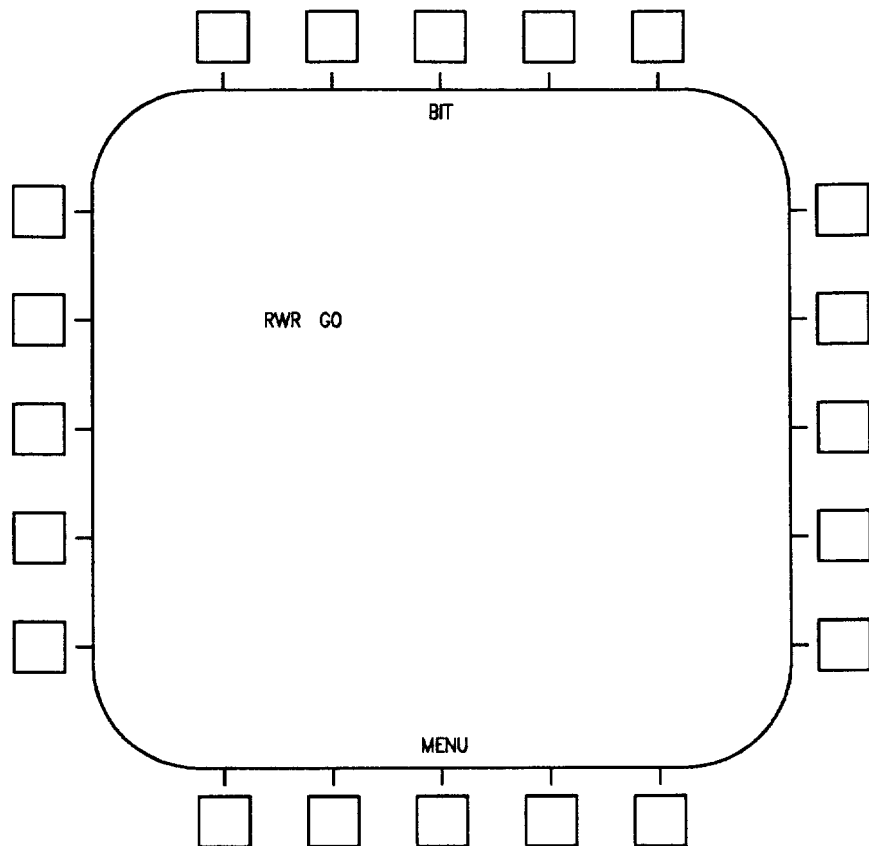


## BIT STATUS PAGE 8

- FIXED FORMAT
- DISPLAYED FOR 1.2 SECONDS  
THEN RETURNS TO STATUS  
AND EMITTER DISPLAY

K

Figure 1. Built-In Test Status Displays (Sheet 5)



BIT CONTROL DISPLAY

L

Figure 1. Built-In Test Status Displays (Sheet 6)

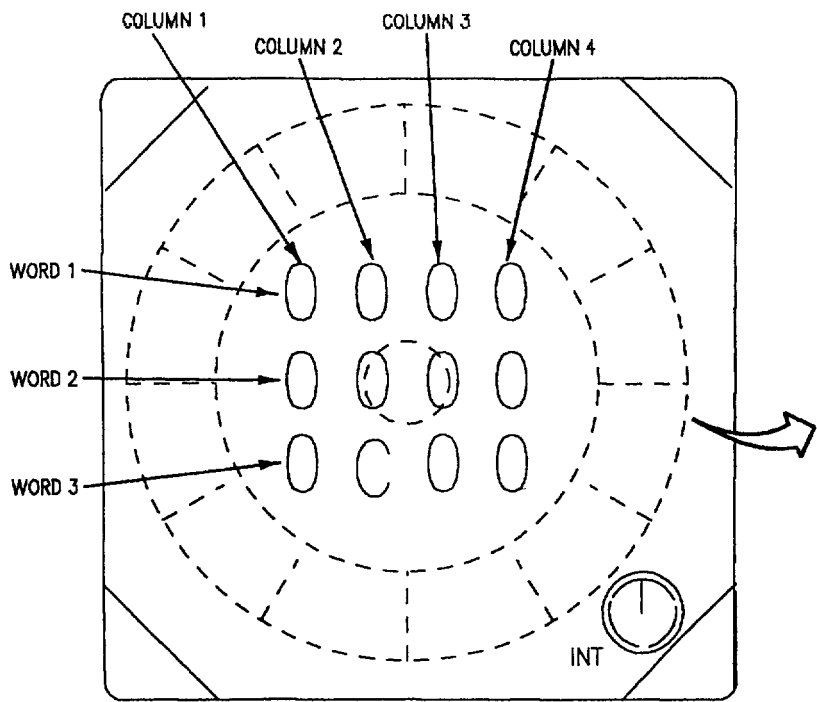


TABLE 1. HEXADECIMAL TO BINARY CONVERSION

DECIMAL	BINARY	DECIMAL	BINARY
1	0001	9	1001
2	0010	A	1010
3	0011	B	1011
4	0100	C	1100
5	0101	D	1101
6	0110	E	1110
7	0111	F	1111
8	1000		

SPECIAL BIT DISPLAY

COLUMN 1				COLUMN 2				COLUMN 3				COLUMN 4							
BIT 15	BIT 14	BIT 13	BIT 12	BIT 11	BIT 10	BIT 9	BIT 8	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0				
WORD 1 (TABLE 2 SHEET 2)				PCU DMA	TKR	SIU	IOU DMA	PCU 315°	PCU 225°	PCU 135°	PCU 45°	IPU CKS	MRU 2	PMU 2	CPU 2	MRU 1	PMU 1	CPU 1	NOT USED
WORD 2 (TABLE 3 SHEET 2)				ALIVE	OVER TEMP	LB BIT	NOT USED	PULS THR	PULS COR	PULS DSC	PULS AMP	NOT USED	PULS DMA	CW THR	IF ATN	CW LOG	CW DMA	SOD	NOT USED
WORD 3 (TABLE 4 SHEET 3)				QUAD RF				LOW BAND VIDEO				QUAD VIDEO				NOT USED			
				315°	225°	135°	45°	315°	225°	135°	45°	315°	225°	135°	45°				
								1 1 0 0											
								BINARY EQUIVALENT OF HEXADECIMAL C DISPLAYED IN WORD 3 COLUMN 2											

Figure 2. Special Built-In Test (Sheet 1)



**TABLE 2. WORD 1 - COUNTERMEASURES COMPUTER  
CP-1293( )/ALR-67(V) FAILURES**

BIT NO.	MALFUNCTION
0	NOT USED
1	CPU 1 - CONTROL PROCESSOR UNIT 1 FAILURE
2	PMU 1 - PROGRAM MEMORY UNIT 1 FAILURE
3	MRU 1 - MEMORY RAM UNIT 1 FAILURE
4	CPU 2 - CONTROL PROCESSOR UNIT 2 FAILURE
5	PMU 2 - PROGRAM MEMORY UNIT 2 FAILURE
6	MRU 2 - MEMORY RAM UNIT 2 FAILURE
7	IPU CKS - INITIAL PROGRAM UNIT (EMITTER LIBRARY PROM CARD) FAILED CHECKSUM TEST
8	PCU 45° - PARAMETER CONVERSION UNIT 45° FAILURE
9	PCU 135° - PARAMETER CONVERSION UNIT 135° FAILURE
10	PCU 225° - PARAMETER CONVERSION UNIT 225° FAILURE
11	PCU 315° - PARAMETER CONVERSION UNIT 315° FAILURE
12	IOU DMA - INPUT/OUTPUT UNIT DIRECT MEMORY ACCESS FAILURE
13	SIU - SERIAL INTERFACE UNIT FAILURE
14	TKR - INTERNAL REAL-TIME TRACKER FAILURE
15	PCU DMA-PARAMETER CONTROL UNIT WIDEBAND DIRECT MEMORY ACCESS CONTROL FUNCTION FAILURE

**TABLE 3. WORD 2 - RADAR RECEIVER R-2055A/ALR-67(V)  
(SPECIAL RECEIVER) FAILURES**

BIT NO.	MALFUNCTION
0	NOT USED
1	CW SOD - CONTINUOUS WAVE STOP-ON-DETECT FAILURE
2	CW DMA - SPECIAL RECEIVER DID NOT PRODUCE ENOUGH DATA ON CONTINUOUS WAVE CHANNEL
3	CW LOG - CONTINUOUS WAVE LOG AMPLITUDE OUT OF TOLERANCE
4	IF ATN - INTERMEDIATE FREQUENCY ATTENUATER FAILURE
5	CW THR - CONTINUOUS WAVE THRESHOLD FAILURE
6	PULS DMA - INSUFFICIENT PULSE CHANNEL DATA FROM SPECIAL RECEIVER
7	NOT USED
8	PULS AMP - LOW AMPLITUDE PULSE CHANNEL DATA
9	PULS DSC - PULSE DISCRIMINATOR FAILURE
10	PULS COR - PULSE CORRELATION TAGGING OF WIDEBAND DATA FAILURE
11	PULS THR - PULSE THRESHOLD FAILURE
12	NOT USED
13	LB BIT - LOW BAND BIT (NO DATA)
14	OVER TEMP - SPECIAL RECEIVER INDICATING OVERHEAT CONDITION
15	ALIVE - SPECIAL RECEIVER NOT RESPONDING TO ALIVE TEST

**TABLE 4. WORD 3 - INTEGRATED ANTENNA AS-3190A/ALR-67(V)  
(INTEGRATED ANTENNA) AND RADAR RECEIVER  
R-2148A/ALR-67(V) (QUADRANT RECEIVER) FAILURES**

BIT NO.	MALFUNCTION
0	} NOT USED
1	
2	
3	
4	QUAD VIDEO 45° - QUADRANT RECEIVER 45° FAILED VIDEO TEST
5	QUAD VIDEO 135° - QUADRANT RECEIVER 135° FAILED VIDEO TEST
6	QUAD VIDEO 225° - QUADRANT RECEIVER 225° FAILED VIDEO TEST
7	QUAD VIDEO 315° - QUADRANT RECEIVER 315° FAILED VIDEO TEST
8	LOW BAND VIDEO 45° - INTEGRATED ANTENNA FAILED 45° LOW BAND VIDEO TEST
9	LOW BAND VIDEO 135° - INTEGRATED ANTENNA FAILED 135° LOW BAND VIDEO TEST
10	LOW BAND VIDEO 225° - INTEGRATED ANTENNA FAILED 225° LOW BAND VIDEO TEST
11	LOW BAND VIDEO 315° - INTEGRATED ANTENNA FAILED 315° LOW BAND VIDEO TEST
12	QUAD RF 45° - QUADRANT RECEIVER 45° FAILED BASEBAND RF TEST
13	QUAD RF 135° - QUADRANT RECEIVER 135° FAILED BASEBAND RF TEST
14	QUAD RF 225° - QUADRANT RECEIVER 225° FAILED BASEBAND RF TEST
15	QUAD RF 315° - QUADRANT RECEIVER 315° FAILED BASEBAND RF TEST

**Figure 2. Special Built-In Test (Sheet 2)**

**THIS PAGE INTENTIONALLY LEFT BLANK.**

---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**LOCATOR**  
**COUNTERMEASURES WARNING AND CONTROL SYSTEM**  
**EFFECTIVITY: 161702 AND UP**

---

## Reference Material

None

## Alphabetical Index

Subject	Page No.
Countermeasures Warning and Control System Locator, Figure 1 .....	2

## Record of Applicable Technical Directives

Type/ Number	Date	Title and ECP No.	Date Incorp.	Remarks
AFC-253	—	US Naval Reserves A+ Avionics Upgrade; Incorporation of (ECP MDA-F/A-18-0560R1)	1 Jan 01	—
AFC-292	—	US Marine Corps Reserves A+ Avionics Upgrade; Incorporation of (ECP MDA-F/A-18-0583)	1 Jan 01	—

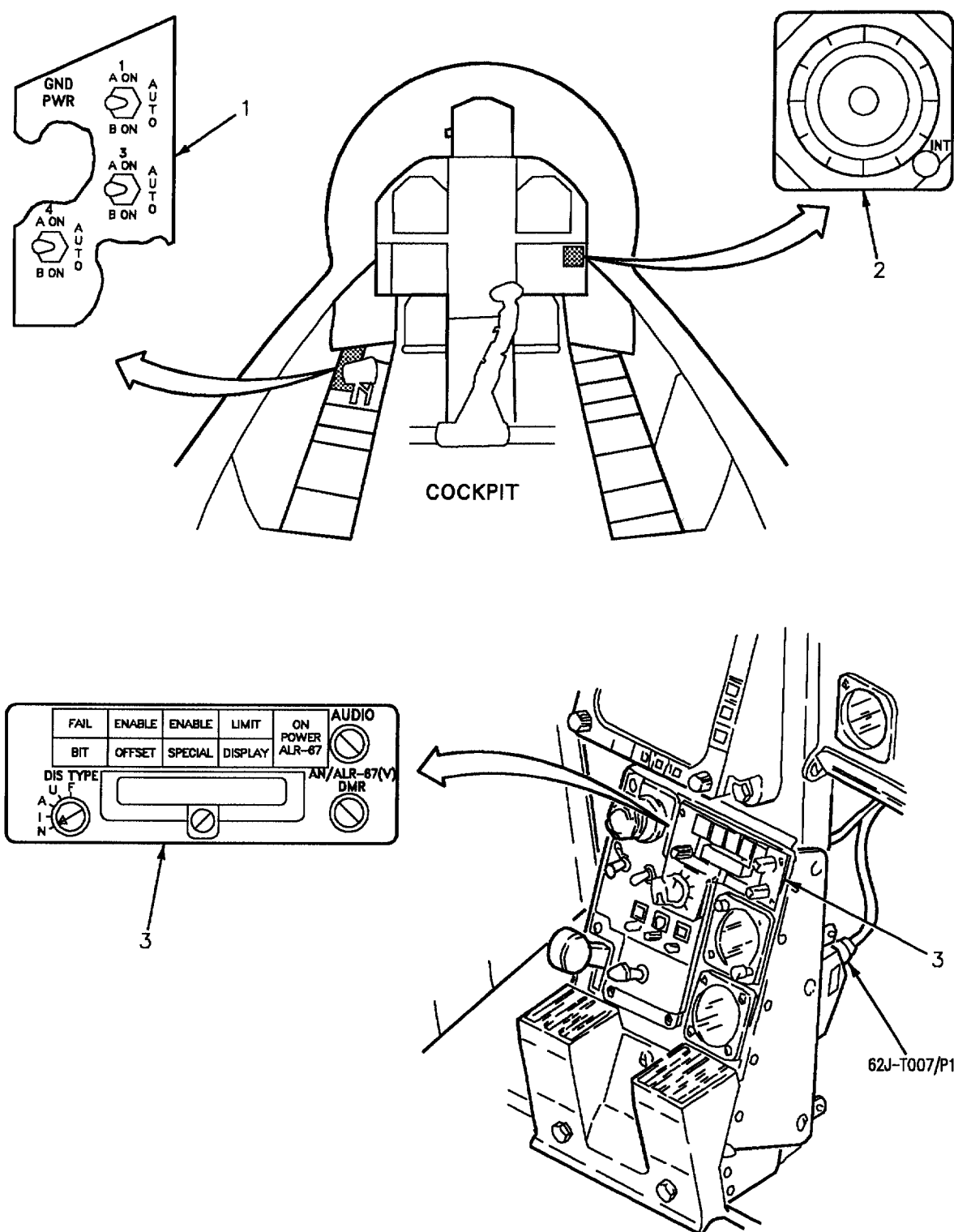


Figure 1. Countermeasures Warning and Control System Locator (Sheet 1)

03200101

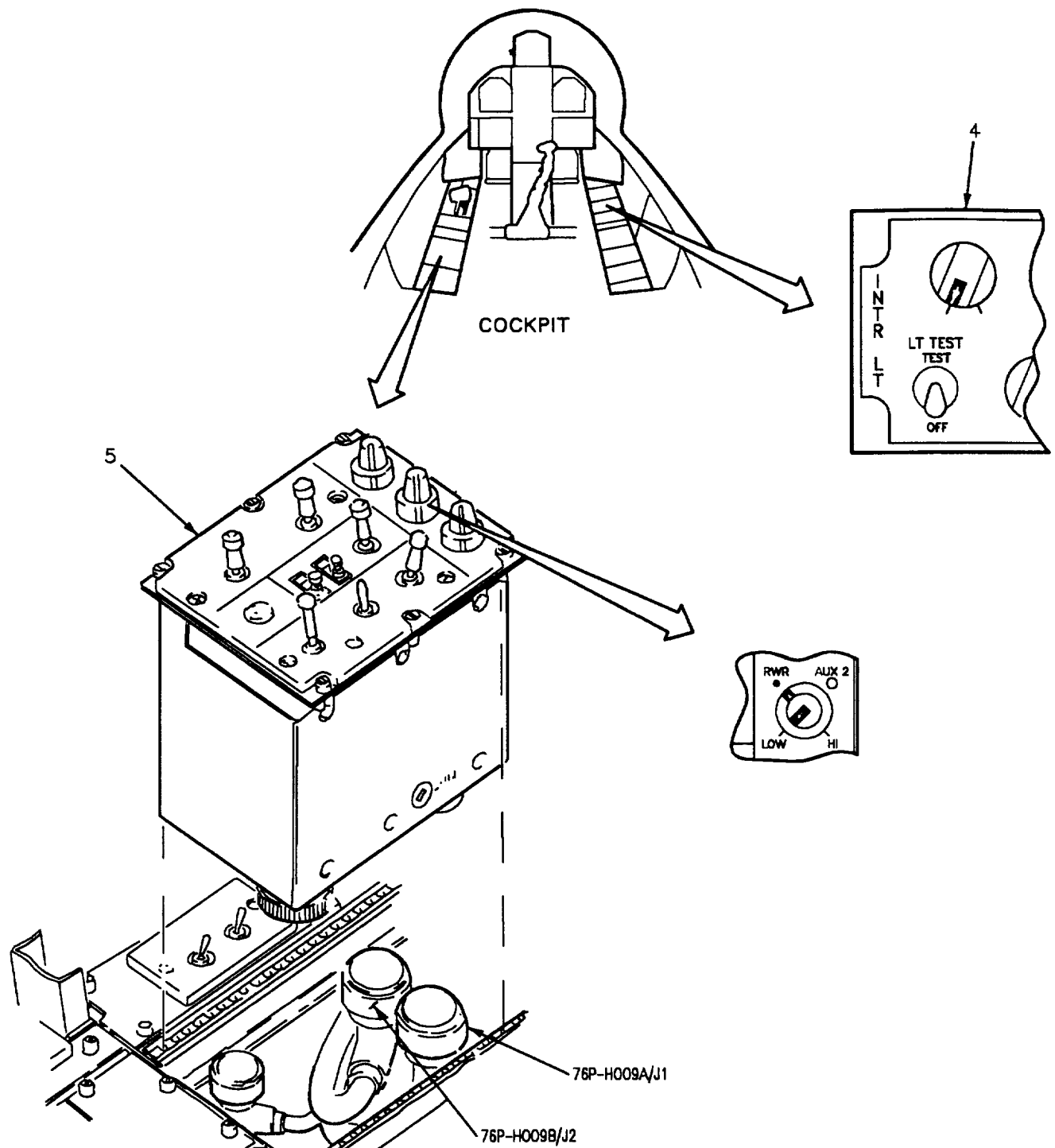


Figure 1. Countermeasures Warning and Control System Locator (Sheet 2)

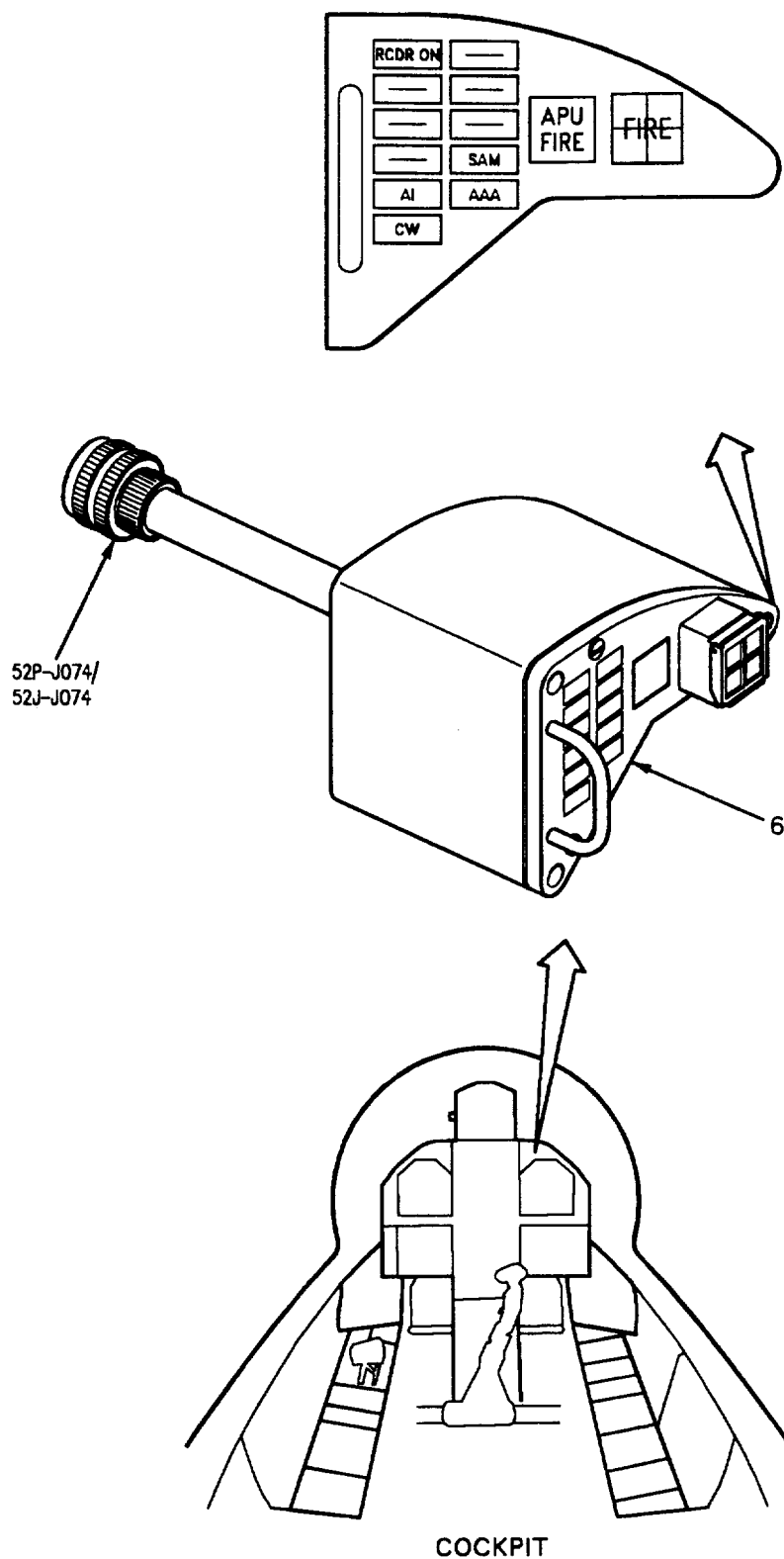


Figure 1. Countermeasures Warning and Control System Locator (Sheet 3)

03200103

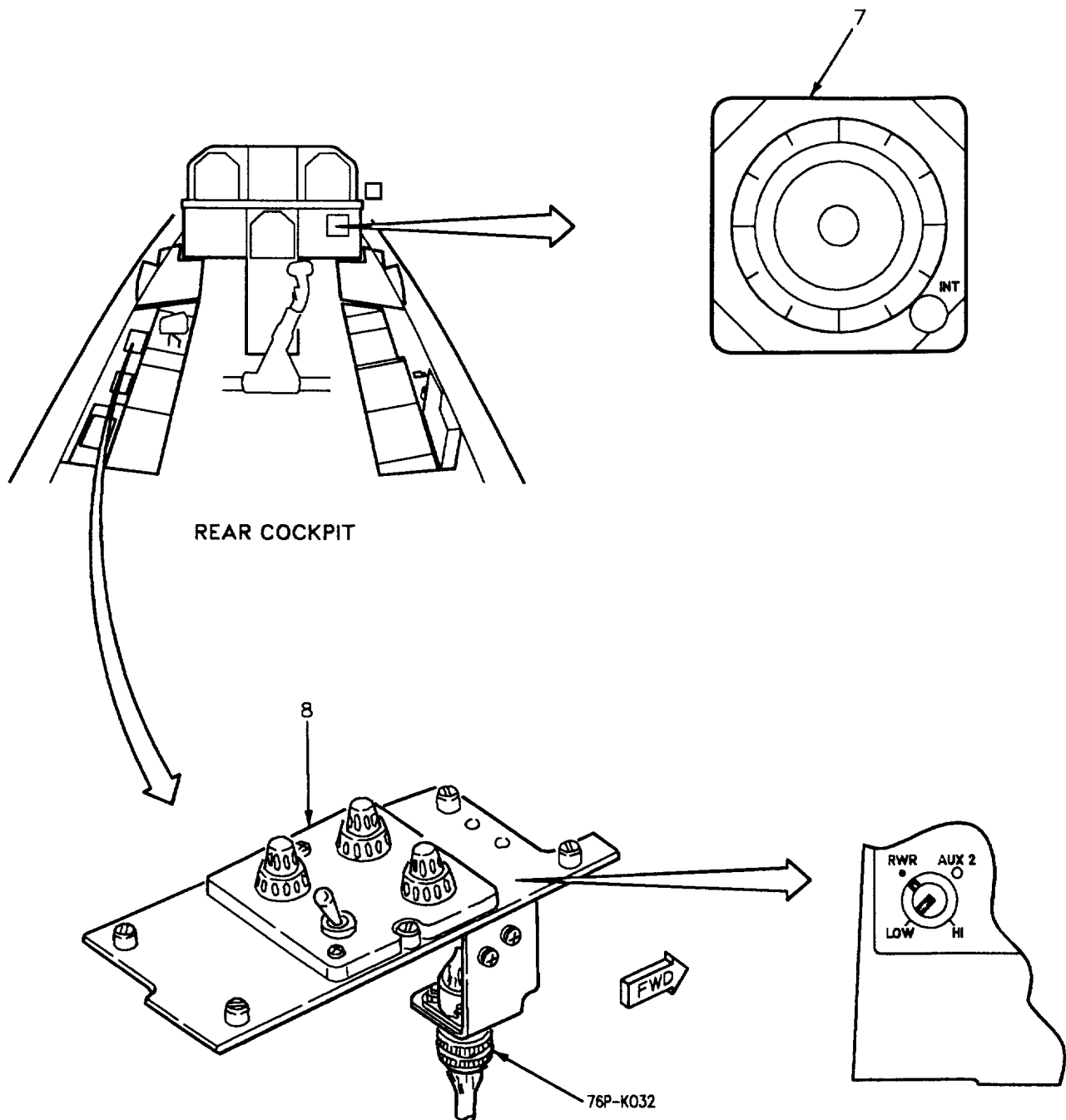


Figure 1. Countermeasures Warning and Control System Locator (Sheet 4)

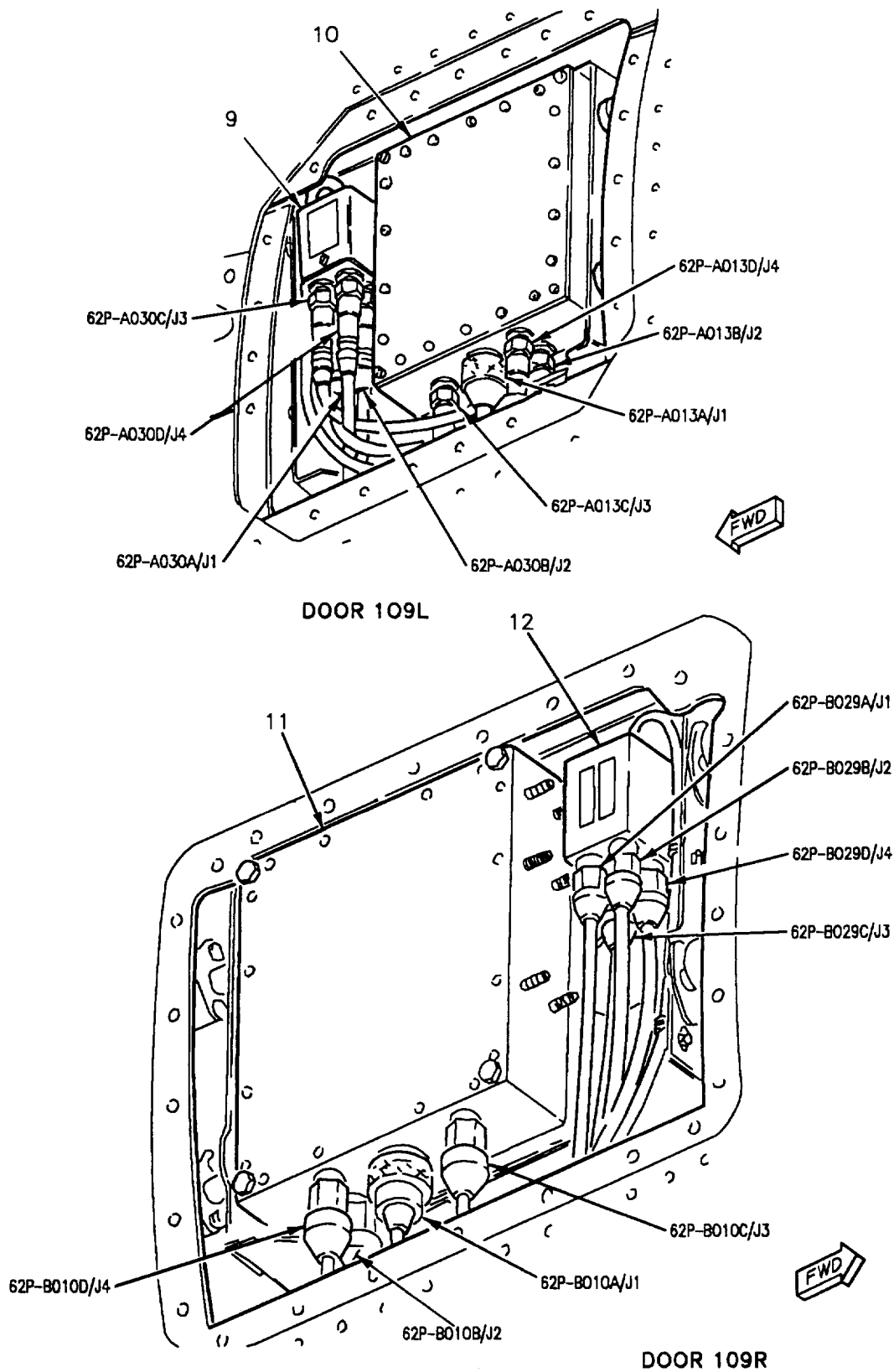
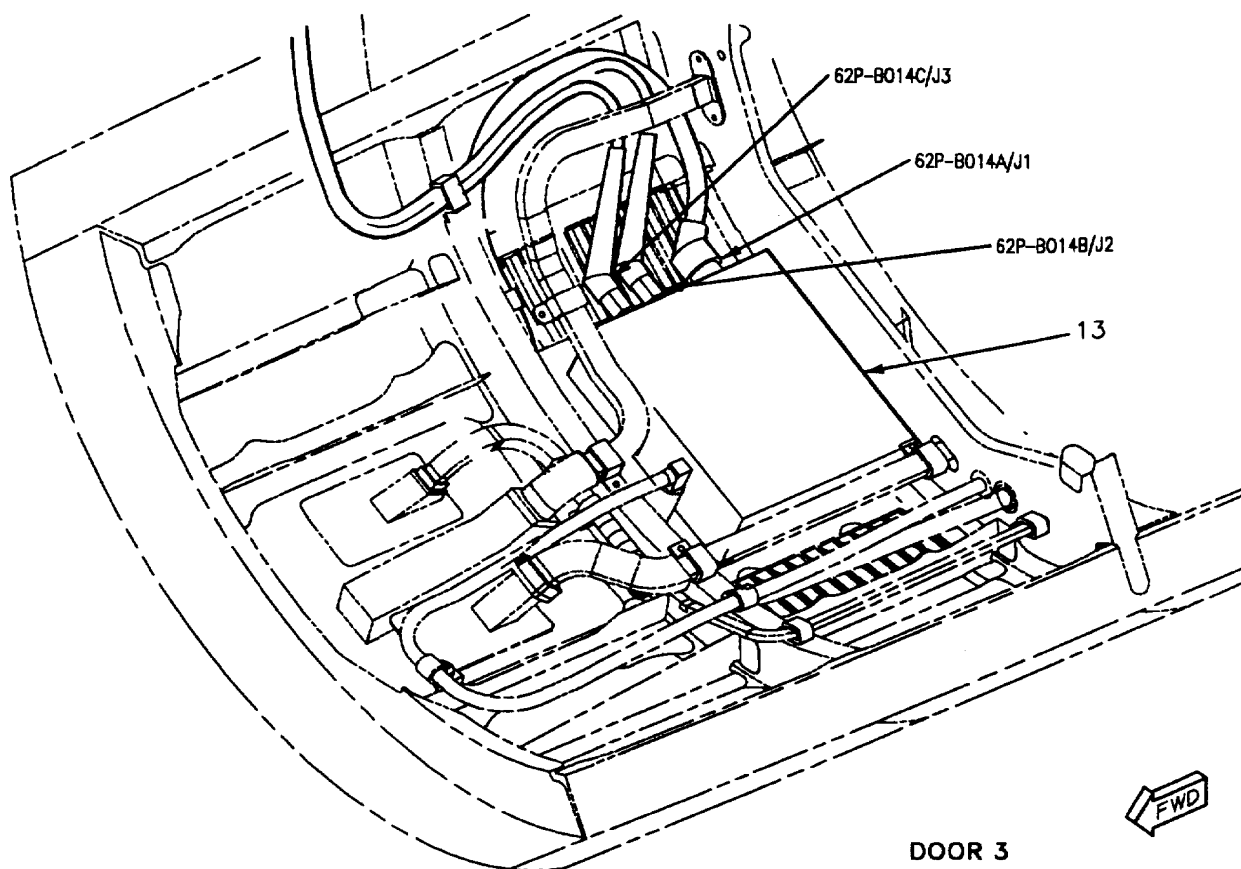


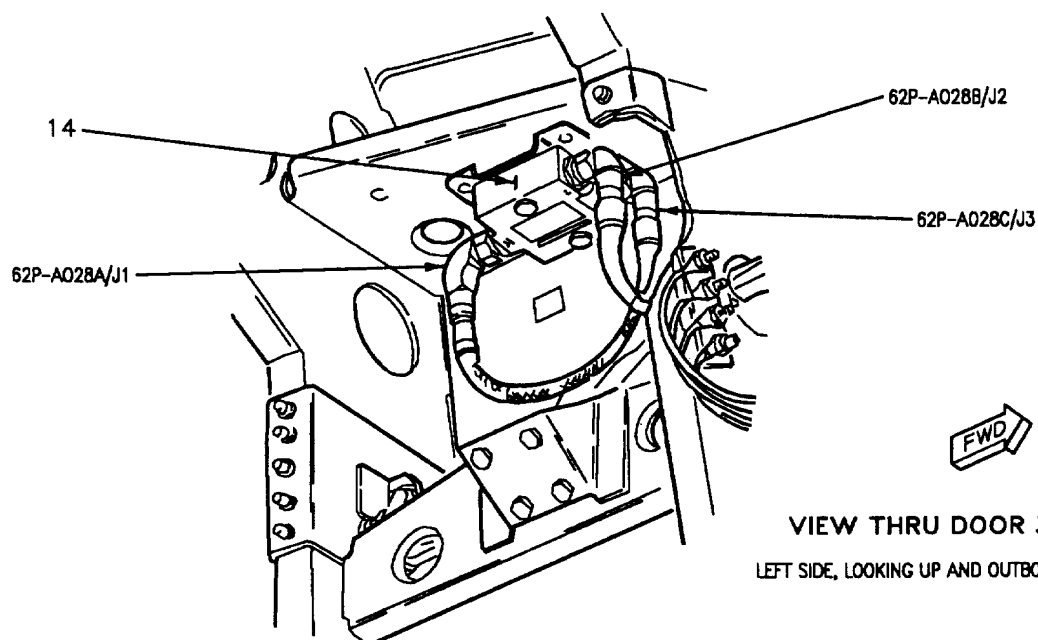
Figure 1. Countermeasures Warning and Control System Locator (Sheet 5)





DOOR 3

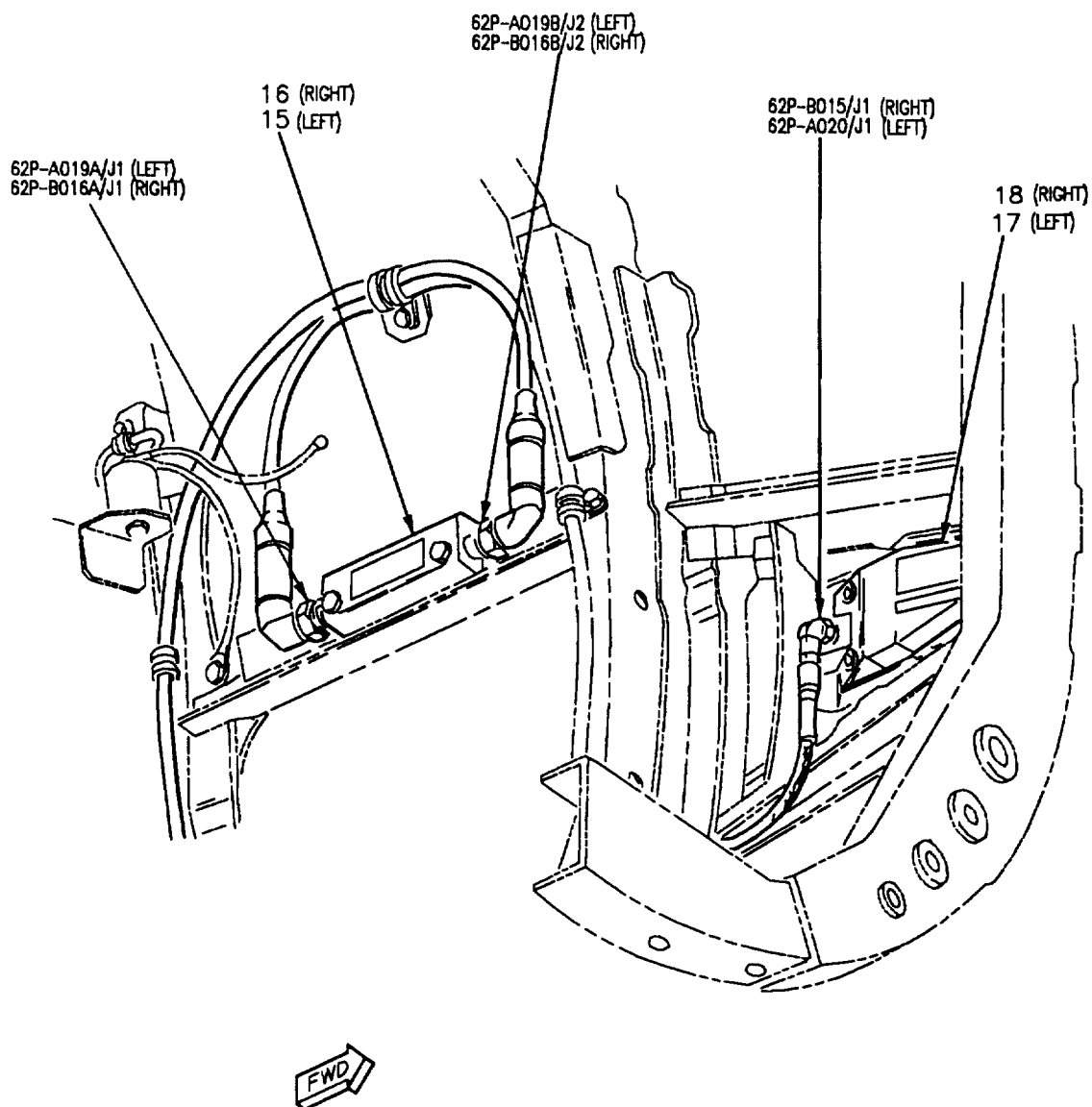
DOOR SHOWN IN OPEN POSITION



VIEW THRU DOOR 3

LEFT SIDE, LOOKING UP AND OUTBOARD

Figure 1. Countermeasures Warning and Control System Locator (Sheet 6)



VIEW THRU DOOR 3

(LEFT SIDE SHOWN, RIGHT SIDE TYPICAL)

Figure 1. Countermeasures Warning and Control System Locator (Sheet 7)

03200107

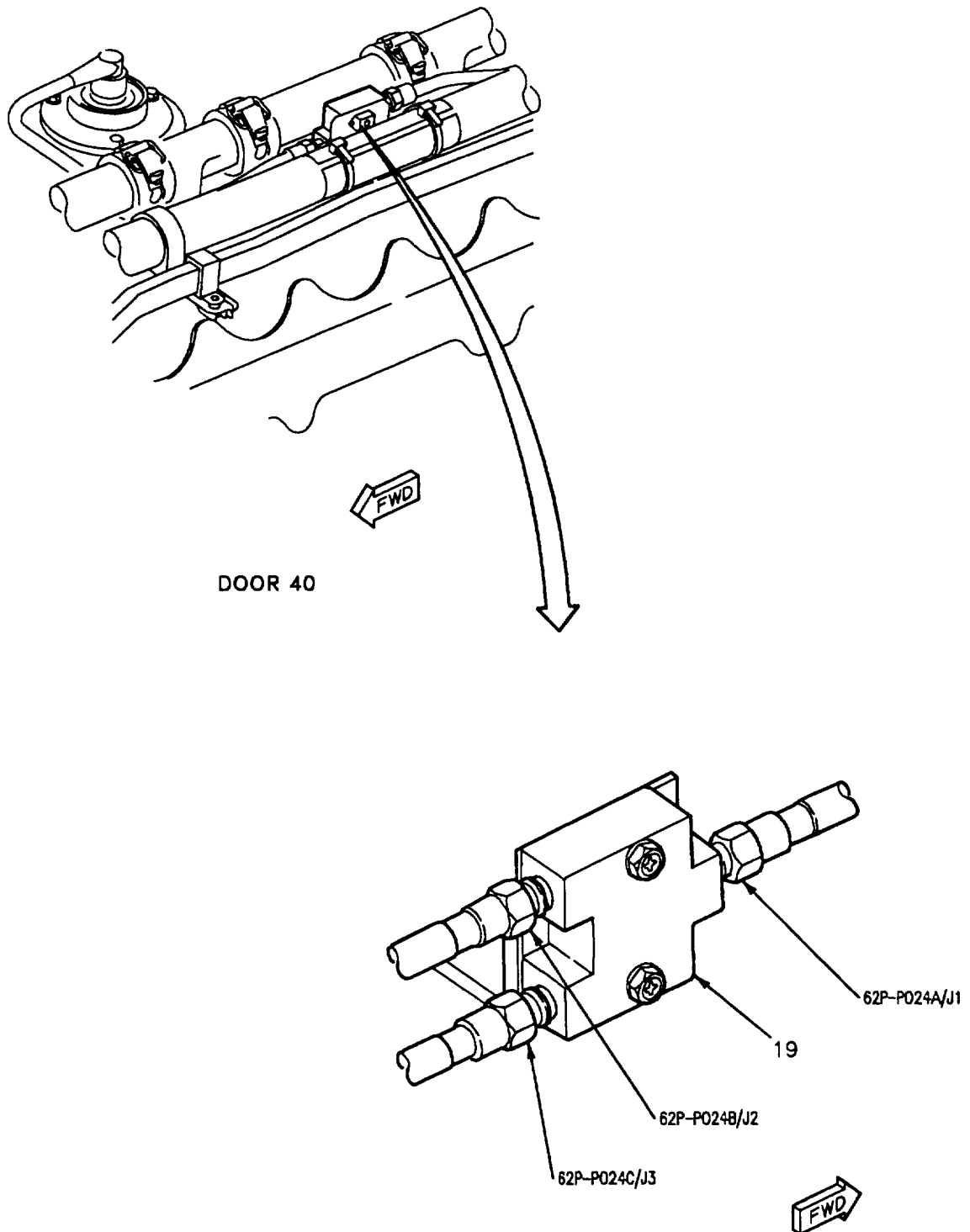


Figure 1. Countermeasures Warning and Control System Locator (Sheet 8)

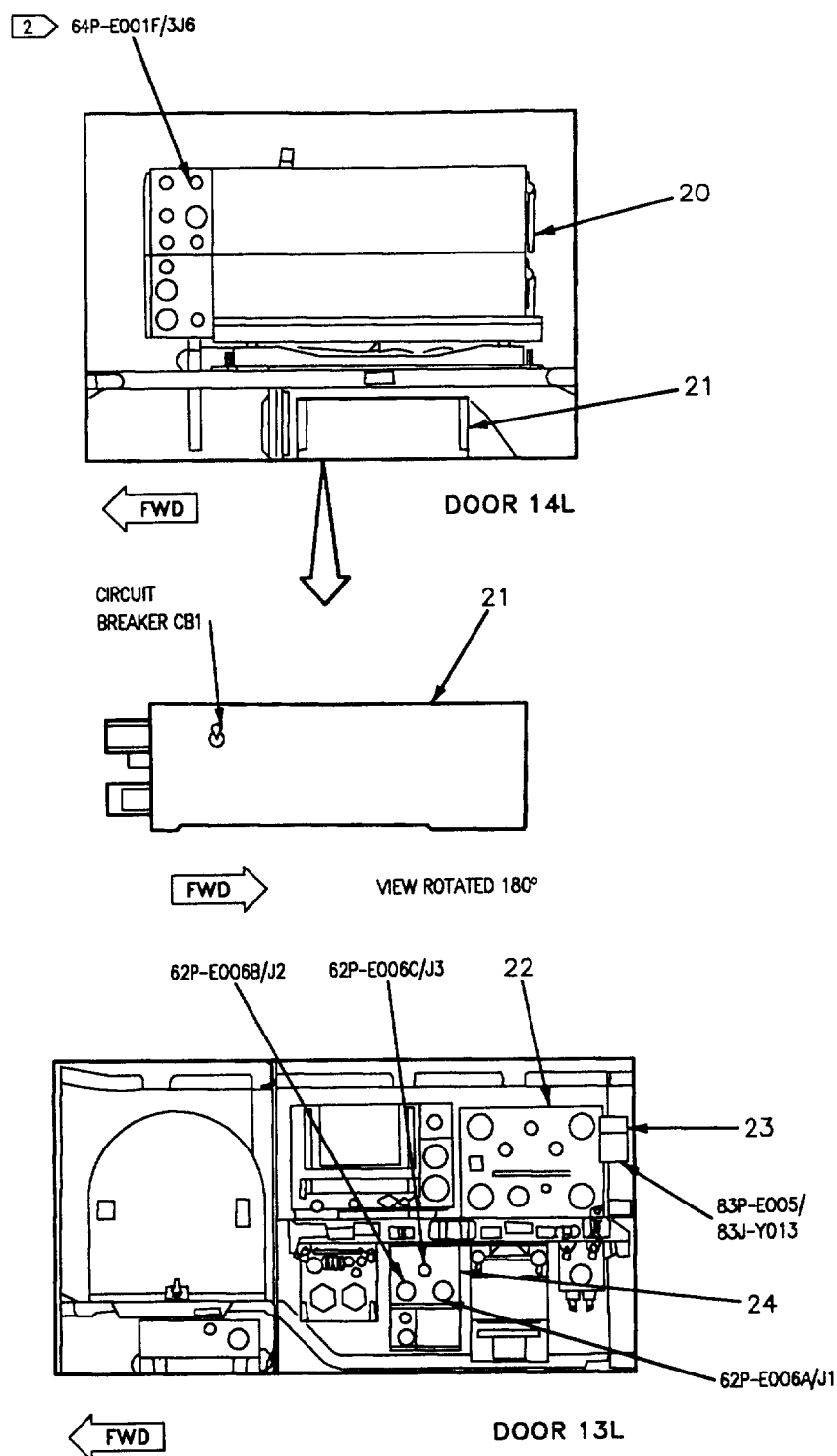


Figure 1. Countermeasures Warning and Control System Locator (Sheet 9)

03200109

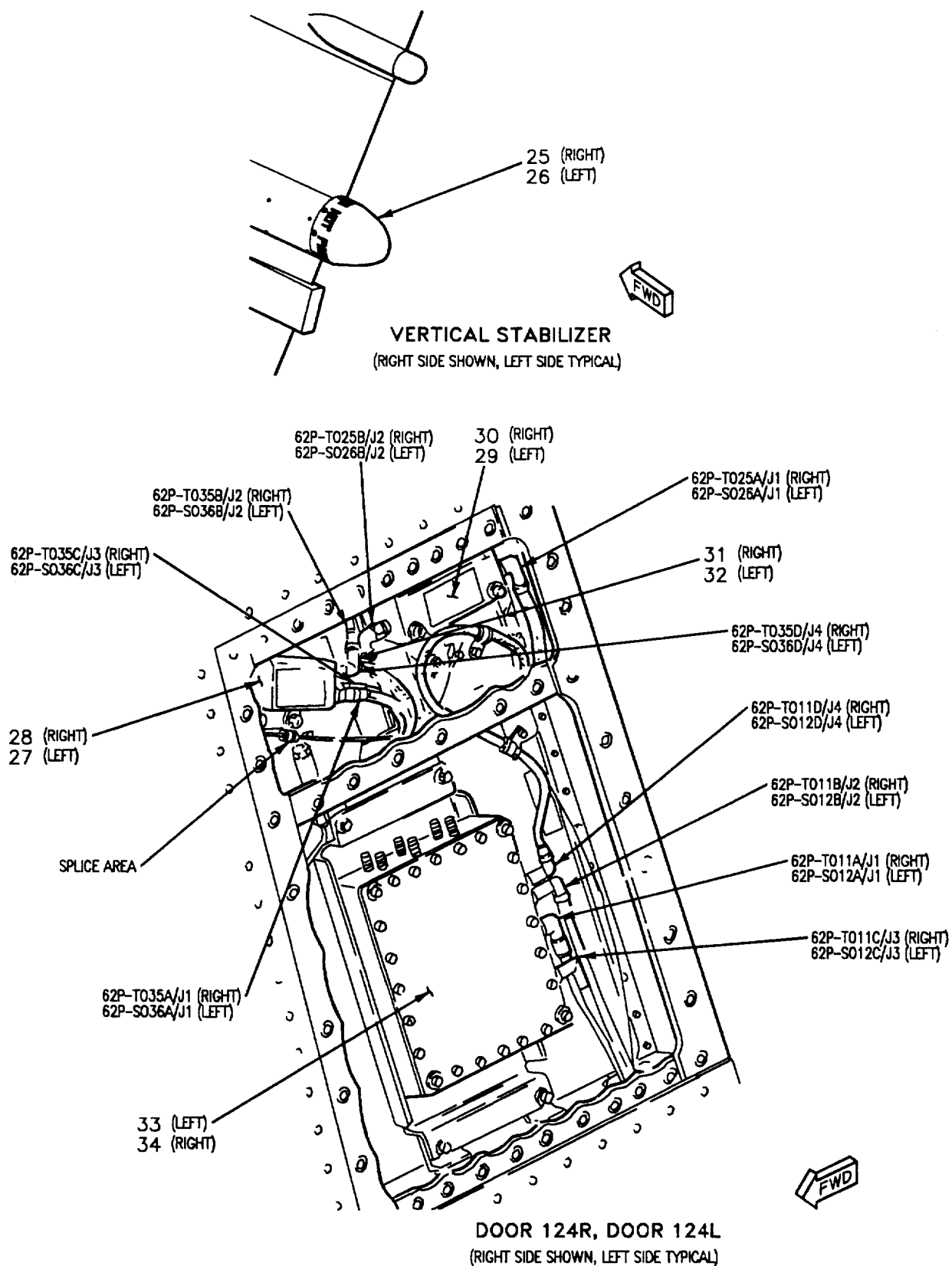
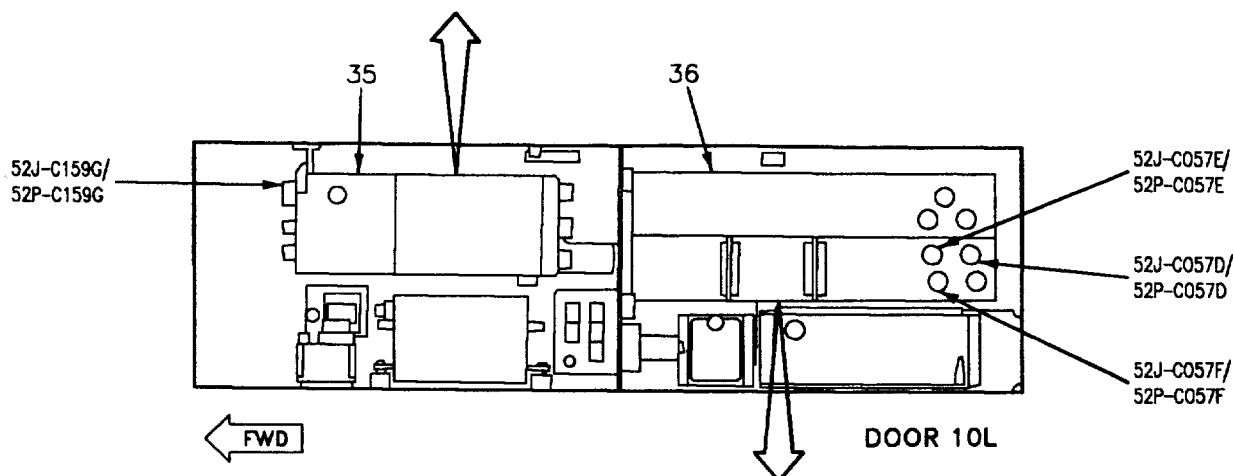


Figure 1. Countermeasures Warning and Control System Locator (Sheet 10)

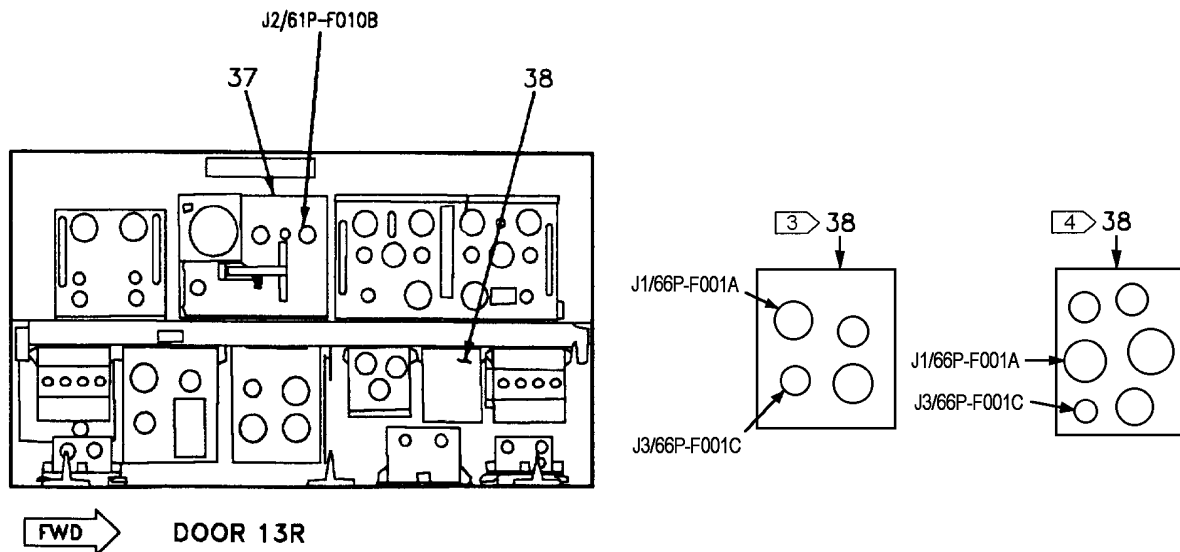
52A-C159		NO. 8 CIRCUIT BREAKER/RELAY PANEL ASSEMBLY	
ZONE	REF DES	NOMENCLATURE	BUS
B1	76CBC027	INTER COMM	ESS 24/28VDC
D2	85CBC004	SIG DATA COMPUTER	U BATT/MAINT
D12	80CBC006	MMD	24/28VDC
E12	80CBC005	MMD	L 115VAC ØC
F12	80CBC004	MMD	L 115VAC ØB
			L 115VAC ØA



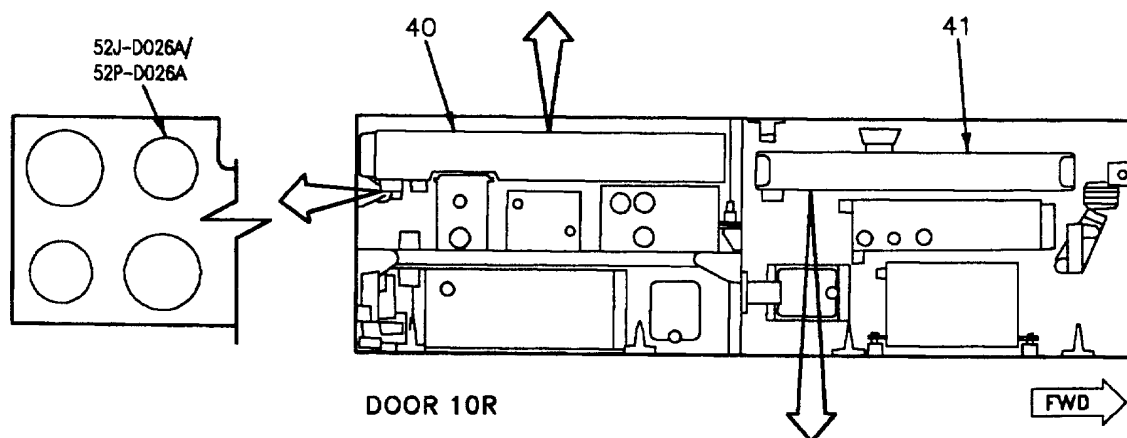
52A-C057		NO. 7 CIRCUIT BREAKER/RELAY PANEL ASSEMBLY	
ZONE	REF DES	NOMENCLATURE	BUS
A11	64CBC011	ALQ-126/165	L 115VAC ØA
A20	83CBC006	MISSION COMP NO. 1	L 115VAC ØA
A27	62CBC001	ALR-67	L 115VAC ØA
A28	62CBC002	ALR-67	L 115VAC ØA
B9	62CBC005	ALR-67 IND CONT/FLTR	L 28VDC
B11	64CBC012	ALQ-126/165	L 115VAC ØB
B20	83CBC007	MISSION COMP NO. 1	L 115VAC ØB
B26	62CBC003	ALR-67	L 115VAC ØB
C11	64CBC013	ALQ-126/165	L 115VAC ØC
C20	83CBC008	MISSION COMP NO. 1	L 115VAC ØC
C26	62CBC004	ALR-67	L 115VAC ØC

Figure 1. Countermeasures Warning and Control System Locator (Sheet 11)

03200111



52A-D026 NO. 4 CIRCUIT BREAKER PANEL ASSEMBLY			
ZONE	REF DES	NOMENCLATURE	BUS
B3	82CBD005	CSC	R 28VDC
C2	76CBD025	INTERCOM	R 28VDC
C10	8CBD005	INT LTS	R 28VDC



52A-D024 NO. 2 CIRCUIT BREAKER PANEL ASSEMBLY			
ZONE	REF DES	NOMENCLATURE	BUS
A11	82CBD002	CSC	R 115VAC ØA
A12	66CBD002	BLANKER	R 115VAC ØA
A17	80CBD007	MFD	R 115VAC ØA
B11	82CBD003	CSC	R 115VAC ØB
B17	80CBD008	MFD	R 115VAC ØB
C11	82CBD004	CSC	R 115VAC ØC
D7	80CBD009	MFD	R 115VAC ØC

Figure 1. Countermeasures Warning and Control System Locator (Sheet 12)

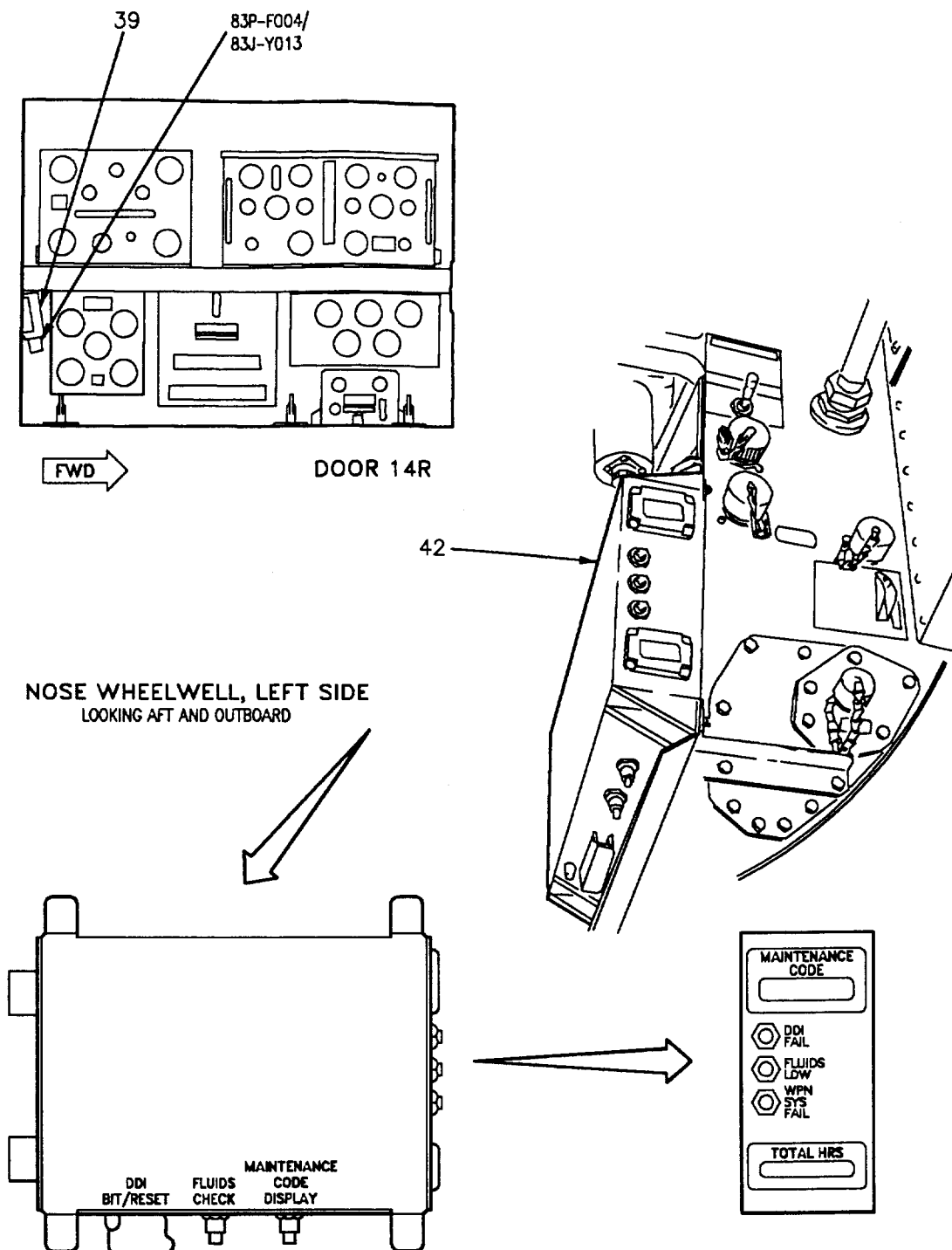


Figure 1. Countermeasures Warning and Control System Locator (Sheet 13)

03200113



Nomenclature	Index No.	Ref Des
ADAPTER	31	62CPT035B
ADAPTER	32	62CPS036B
COMMAND LAUNCH COMPUTER CP-1001( )/AWG	37	61A-F010
CONTROL-INDICATOR C-10252/ALR-67(V)	3	62A-J007
COUNTERMEASURES COMPUTER CP-1293( )/ALR-67(V)	24	62A-E006
DIGITAL DATA COMPUTER NO. 1	22	83A-E001
FORWARD AZIMUTH INDICATOR IP-1276/ALR-67(V)	2	62A-J008
FORWARD RADAR RECEIVER COUPLER CU-2292/ALR-67(V)	14	62A-A028
GND PWR CONTROL PANEL ASSEMBLY	1	1A-H004
INTEGRATED ANTENNA AS-3190A/ALR-67(V)	13	62A-B01
INTERCOMMUNICATION AMPLIFIER-CONTROL	5	76A-H009
<b>3</b> INTERFERENCE BLANKER MX-9965/A	38	66A-F001
<b>4</b> INTERFERENCE BLANKER MX-11741/A	38	66A-F001
INTR LT CONTROL BOX PANEL ASSEMBLY	4	8A-J002
LEFT FORWARD ANTENNA-RADOME AS-3360/ALR	17	62E-A020
LEFT FORWARD BAND PASS FILTER F-1539/ALR-67(V)	15	62FLA019
LEFT FORWARD RADAR RECEIVER R-2148A/ALR-67(V)	10	62A-A013
LEFT FORWARD RADIO FREQUENCY TRANSMISSION SWITCH SA-2362/ALR-67(V)	9	62S-A030
LEFT MUX BUS IMPEDANCE MATCHING NETWORK	23	83A-Y013
LEFT REAR ANTENNA-RADOME AS-3306/ALR	26	62E-S018
LEFT REAR BAND PASS FILTER F-1539/ALR-67(V)	29	62FLS026
LEFT REAR RADAR RECEIVER R-2148A/ALR-67(V)	33	62A-S012
LEFT REAR RADIO FREQUENCY TRANSMISSION SWITCH SA-2362/ALR-67(V)	27	62S-S036
NO. 2 CIRCUIT BREAKER PANEL ASSEMBLY	41	52A-D024

Figure 1. Countermeasures Warning and Control System Locator (Sheet 14)




Nomenclature	Index No.	Ref Des
NO. 4 CIRCUIT BREAKER PANEL ASSEMBLY	40	52A-D026
NO. 7 CIRCUIT BREAKER/RELAY PANEL ASSEMBLY	36	52A-C057
NO. 8 CIRCUIT BREAKER/RELAY PANEL ASSEMBLY	35	52A-C159
NOSE WHEELWELL DIGITAL DISPLAY INDICATOR	42	85A-G003
RADAR RECEIVER R-2055A/ALR-67(V)	21	62A-E009
REAR AZIMUTH INDICATOR IP-1276/ALR-67(V)	7	62A-L027
REAR RADAR RECEIVER COUPLER CU-2292/ALR-(V)	19	62A-P024
RECEIVER-TRANSMITTER RT-1079( )/ALQ-126	20	64A-E001
RH ADVISORY AND THREAT WARNING INDICATOR PANEL	6	52A-J074
RIGHT FORWARD ANTENNA-RADOME AS-3359/ALR	18	62E-B015
RIGHT FORWARD BAND PASS FILTER F-1539/ALR-67(V)	16	62FLB016
RIGHT FORWARD RADAR RECEIVER R-2148A/ALR-67(V)	11	62A-B010
RIGHT FORWARD RADIO FREQUENCY TRANSMISSION SWITCH SA-2362/ALR-67(V)	12	62S-B029
RIGHT MUX BUS IMPEDANCE MATCHING NETWORK	39	83A-Y013
RIGHT REAR ANTENNA-RADOME AS-3306/ALR	25	62E-T017
RIGHT REAR BAND PASS FILTER F-1539/ALR-67(V)	30	62FLT025
RIGHT REAR RADAR RECEIVER R-2148A/ALR-67(V)	34	62A-T011
RIGHT REAR RADIO FREQUENCY TRANSMISSION SWITCH SA-2362/ALR-67(V)	28	62S-T035
VOLUME CONTROL PANEL ASSEMBLY	8	76A-K032
<p style="text-align: center;"><b>LEGEND</b></p> <p>1. Aircraft connector locations are shown in A1-F18A()-WDM-000.</p> <p> On Receiver-Transmitter RT-1079B/ALQ-126 only.</p> <p> On F/A-18A before F/A-18 AFC 253 or F/A-18 AFC 292 and F/A-18B.</p> <p> On F/A-18A 162394 thru 163175 after F/A-18 AFC 253 or F/A-18 AFC 292.</p>		

Figure 1. Countermeasures Warning and Control System Locator (Sheet 15)

---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TROUBLESHOOTING - BUILT-IN TEST PART 1**  
**COUNTERMEASURES WARNING AND CONTROL SYSTEM**  
**EFFECTIVITY: 161702 AND UP**

---

**Reference Material**

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Line Maintenance Access Doors .....	A1-F18AC-LMM-010

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Table 1. POWER ON Light Does Not Come On .....	1
Table 2. No Display On Azimuth Indicator .....	3
Table 3. Maintenance Action for Maintenance Code 020 .....	7
Table 4. Overtemperature Condition .....	10
Table 5. Azimuth Indicator Displays Flashing B .....	11


**Record of Applicable Technical Directives**

None

**Table 1. POWER ON Light Does Not Come On**

<b>Support Equipment Required</b>	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
Countermeasures Warning and Control System Power Interface Schematic (A1-F18AC-760-500, WP011 00) may be used with this procedure.	
For locator, see WP032 00.	

**Table 1. POWER ON Light Does Not Come On (Continued)**

Malfunction is caused by one of the items listed below:		
Aircraft Wiring Control-Indicator C-10250/ALR-67(V) No. 7 Circuit Breaker/Relay Panel Assembly		
Procedure	No	Yes
<div style="text-align: center;">  </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
a. On Control-Indicator C-10250/ALR-67(V), are BIT, OFFSET, LIMIT and SPECIAL lights on? .....	c	b
b. Replace Control-Indicator C-10250/ALR-67(V) (A1-F18AC-760-300, WP056 00). Do step g. ....	-	-
c. Do substeps below:		
(1) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.		
(2) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) In cockpit, remove RH inboard kickshield panel assembly, door CPK (A1-F18AC-LMM-010).		
(5) Disconnect 62J-J007 from P1 on Control-Indicator C-10250/ALR-67(V).		
(6) Apply electrical power (A1-F18AC-LMM-000).		
(7) On GND PWR control panel assembly, set 3 switch to B ON and hold for 3 seconds.		
(8) Does 28vdc exist from 62J-J007 pin 4 (+) to pin 21 (-)? .....	d	b


**Table 1. POWER ON Light Does Not Come On (Continued)**

Procedure	No	Yes
d. Do substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		
(2) Open door 10L (A1-F18AC-LMM-010).		
(3) Disconnect 52P-C057D from no. 7 circuit breaker/relay panel assembly.		
(4) Does continuity exist between 52P-C057D pin 88 to 62J-J007 pin 4? .....	e	f
e. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step g. ....	-	-
f. Isolate between no. 7 circuit breaker/relay panel assembly wiring and 1K-C127 (A1-F18AC-420-300, WP032 00). Do step g. ....	-	-
g. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 62J-J007		
(2) 52P-C057D		
(3) RH inboard kickshield panel assembly, door CPK		
(4) Door 10L .....	-	-

**Table 2. No Display On Azimuth Indicator**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
Countermeasures Warning and Control System Power Interface Schematic (A1-F18AC-760-500, WP011 00) may be used with this procedure.	
For locator, see WP032 00.	

**Table 2. No Display On Azimuth Indicator (Continued)**

Malfunction is caused by one of the items listed below:		
Aircraft Wiring Countermeasures Computer CP-1293( )/ALR-67(V) Forward Azimuth Indicator IP-1276/ALR-67(V) Rear Azimuth Indicator IP-1276/ALR-67(V)		
Procedure	No	Yes
<div style="text-align: center;">  <p>CAUTION</p> </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
a. Did forward Azimuth Indicator IP-1276/ALR-67(V) have display? .....	b	l
b. Do substeps below:		
(1) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.		
(2) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Remove forward Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00).		
(5) Apply electrical power (A1-F18AC-LMM-000).		
(6) On GND PWR control panel assembly, set 3 switch to B ON and hold for 3 seconds.		
(7) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(8) Does 6.3vac exist from 62P-J008 pin 12 to pin 19? .....	k	c
c. Does -12vdc exist from 62P-J008 pin 10 (+) to pin 5 (-)? .....	h	d
d. Does +6vdc exist from 62P-J008 pin 6 (+) to pin 7 (-)? .....	h	e
e. Does +25vdc exist from 62P-J008 pin 11 (+) to pin 18 (-)? .....	h	f

**Table 2. No Display On Azimuth Indicator (Continued)**

Procedure	No	Yes
f. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) Does continuity exist from 62P-J008 pin 22 to aircraft ground? .....	i	g
g. Replace forward Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00). Do step o. ....	-	-
h. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) Open door 13L (A1-F18AC-LMM-010).		
(4) Disconnect 62P-E006A from J1 on Countermeasures Computer CP-1293( )/ALR-67(V).		
(5) Does continuity exist from:		
62P-J008 pin 5 to 62P-E006A pin 10		
62P-J008 pin 10 to 62P-E006A pin 37		
62P-J008 pin 6 to 62P-E006A pin 72		
62P-J008 pin 6 to 62P-E006A pin 78		
62P-J008 pin 7 to 62P-E006A pin 71		
62P-J008 pin 11 to 62P-E006A pin 14		
62P-J008 pin 18 to 62P-E006A pin 60? .....	i	j
i. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step o. ....	-	-
j. Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00). Do step o. ....	-	-
k. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) Open door 13L (A1-F18AC-LMM-010).		
(4) Disconnect 62P-E006C from J1 on Countermeasures Computer CP-1293( )/ALR-67(V).		
(5) Does continuity exist from:		
62P-J008 pin 12 to 62P-E006C pin 3		
62P-J008 pin 19 to 62P-E006C pin 12? .....	i	j

**Table 2. No Display On Azimuth Indicator (Continued)**

Procedure	No	Yes
<p>l. Do substeps below:</p> <p>(1) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.</p> <p>(2) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.</p> <p>(3) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(4) Remove rear Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00).</p> <p>(5) Open door 13L (A1-F18AC-LMM-010).</p> <p>(6) Disconnect 62P-E006C from J3 on Countermeasures Computer CP-1293( )/ALR-67(V).</p> <p>(7) Does continuity exist from:</p> <p>62P-L027 pin 12 to 62P-E006C pin 3</p> <p>62P-L027 pin 19 to 62P-E006C pin 12? .....</p>	i	m
<p>m. Do substeps below:</p> <p>(1) Disconnect 62P-E006A from J1 on Countermeasures Computer CP-1293( )/ALR-67(V).</p> <p>(2) Does continuity exist from:</p> <p>62P-L027 pin 5 to 62P-E006A pin 10</p> <p>62P-L027 pin 10 to 62P-E006A pin 37</p> <p>62P-L027 pin 6 to 62P-E006A pin 72</p> <p>62P-L027 pin 6 to 62P-E006A pin 78</p> <p>62P-L027 pin 7 to 62P-E006A pin 71</p> <p>62P-L027 pin 11 to 62P-E006A pin 14</p> <p>62P-L027 pin 18 to 62P-E006A pin 60</p> <p>62P-L027 pin 22 to aircraft ground? .....</p>	i	n
<p>n. Replace rear Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00). Do step o. ....</p>	-	-
<p>o. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:</p> <p>(1) Forward Azimuth Indicator IP-1276/ALR-67(V)</p> <p>(2) Rear Azimuth Indicator IP-1276/ALR-67(V)</p> <p>(3) 62P-E006A</p> <p>(4) 62P-E006C</p> <p>(5) Door 13L .....</p>	-	-



**Table 3. Maintenance Action for Maintenance Code 020**

Support Equipment Required

NOTE

Alternate item type designations or part numbers are listed in parentheses.

Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter

Materials Required

None

NOTE

Countermeasures Warning and Control System Power Interface Schematic (A1-F18AC-760-600, WP011 00) may be used with this procedure.

For locator, see WP032 00.

Malfunction is caused by one of the items listed below:

Aircraft Wiring

Control-Indicator C-10250/ALR-67(V)

Countermeasures Computer CP-1293( )/ALR-67(V)

No. 7 Circuit Breaker/Relay Panel Assembly

Procedure	No	Yes
<div>CAUTION</div> <div> <div>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</div> <div>NOTE</div> <div>The question used in logic tree “Does continuity exist” means to test for the items listed below:</div> <div> <div>1. Pin to pin test per procedural step.</div> <div>2. Shorts to ground.</div> <div>3. Shorts between surrounding pins on connectors.</div> <div>4. Shorts between shield and conductors.</div> <div>5. Shield continuity.</div> </div> </div>		

**Table 3. Maintenance Action for Maintenance Code 020 (Continued)**

Procedure	No	Yes
<p>a. Do substeps below:</p> <p>(1) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.</p> <p>(2) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.</p> <p>(3) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(4) Open door 13L (A1-F18AC-LMM-010).</p> <p>(5) Disconnect 62P-E006C from J3 on Countermeasures Computer CP-1293( )/ALR-67(V).</p> <p>(6) Apply electrical power (A1-F18AC-LMM-000).</p> <p>(7) On GND PWR control panel assembly, set 3 switch to B ON and hold for 3 seconds.</p> <p>(8) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.</p> <p>(9) Does 115vac exist from:</p> <p>62P-E006C pin 10 to pin 11</p> <p>62P-E006C pin 1 to pin? .....</p>	b	f
<p>b. Do substeps below:</p> <p>(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.</p> <p>(2) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(3) Does continuity exist from:</p> <p>62P-E006C pin 11 to aircraft ground</p> <p>62P-E006C pin 2 to aircraft ground? .....</p>	c	d
c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step j. ....	-	-
<p>d. Do substeps below:</p> <p>(1) Open door 10L (A1-F18AC-LMM-010).</p> <p>(2) Disconnect 52P-C057D from no. 7 circuit breaker/relay panel assembly.</p> <p>(3) Does continuity exist from:</p> <p>52P-C057D pin 87 to 62P-E006C pin 10</p> <p>52P-C057D pin 87 to 62P-E006C pin 1? .....</p>	c	e
e. Isolate between no. 7 circuit breaker/relay panel assembly wiring and 1K-C127 (A1-F18AC-420-300, WP032 00). Do step j. ....	-	-

**Table 3. Maintenance Action for Maintenance Code 020 (Continued)**

Procedure	No	Yes
f. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(4) Does continuity exist from 62P-E006C pin 6 to pin 4? .....	g	i
g. Do substeps below:		
(1) Remove RH inboard kickshield panel assembly, door CPK (A1-F18AC-LMM-010).		
(2) Disconnect P1 from 62J-J007.		
(3) Does continuity exist from:		
62P-E006C pin 6 to 62J-J007 pin 9		
62P-E006C pin 4 to 62J-J007 pin 10? .....	c	h
h. Replace Control-Indicator C-10250/ALR-67(V) (A1-F18AC-760-300, WP056 00). Do step j. ....	-	-
i. Malfunction has been isolated to Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00) or Avionic Mux Bus 2X (62P-E006B pin 1 to 62P-E006B, S007, 62P-E006B pin 30 to 62P-E006B, S006) (A1-F18A( )-WDM-000). Do step j. ....	-	-
j. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 62P-E006C		
(2) 62P-E006B		
(3) 62J-J007		
(4) 52P-C057D		
(5) Door 10L		
(6) Door 13L		
(7) RH inboard kickshield panel assembly, door CPK .....	-	-

Table 4. Overtemperature Condition

<p>Support Equipment Required</p> <p>None</p> <p>Materials Required</p> <p>None</p> <p>NOTE</p> <p>For locator, see WP032 00.</p> <p>Malfunction is caused by one of the items listed below:</p> <p>Countermeasures Computer CP-1293( )/ALR-67(V)</p> <p>ECS Cooling Air</p> <p>Radar Receiver R-2055A/ALR-67(V)</p>		
Procedure	No	Yes
<p><b>CAUTION</b></p> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p>NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>1. Pin to pin test per procedural step.</li><li>2. Shorts to ground.</li><li>3. Shorts between surrounding pins on connectors.</li><li>4. Shorts between shield and conductors.</li><li>5. Shield continuity.</li></ol>		
a. Did special BIT display indicate a special receiver overheat condition (word 2, bit 14 set)? .....	e	b
b. Do substeps below:		
(1) Open door 14L (A1-F18AC-LMM-010).		
(2) Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).		
(3) Apply electrical power (A1-F18AC-LMM-000).		
(4) On GND PWR control panel assembly, set and hold 1 switch to A ON for 3 seconds.		
(5) Is a free flow of air available from ALR-67 avionics cooling air duct immediately inboard from Radar Receiver R-2055A/ALR-67(V)? .....	c	d

**Table 4. Overtemperature Condition (Continued)**

Procedure	No	Yes
c. Isolate defective ECS ducting (A1-F18AC-PIM-000). Do step g. ....	-	-
d. Replace Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00). Do step g. ....	-	-
e. Do substeps below:		
(1) Open door 13L (A1-F18AC-LMM-010).		
(2) Remove Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00).		
(3) Apply electrical power (A1-F18AC-LMM-000).		
(4) On GND PWR control panel assembly, set and hold 1 switch to A ON for 3 seconds.		
(5) Is a free flow of air available from ALR-67 3L bay aircraft avionics air conditioning heating duct assembly immediately inboard from Countermeasures Computer CP-1293( )/ALR-67(V)? .....	c	f
f. Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00). Do step g. ....	-	-
g. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) Door 14L		
(2) Door 13L .....	-	-

**Table 5. Azimuth Indicator Displays Flashing B**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	

Table 5. Azimuth Indicator Displays Flashing B (Continued)

NOTE		
<p>Controls, Displays and Audio Schematic (A1-F18AC-760-500, WP015 00) may be used with this procedure.</p> <p>For locator, see WP032 00.</p> <p>Malfunction is caused by one of the items listed below:</p> <p>Aircraft Wiring Countermeasures Computer CP-1293( )/ALR-67(V) Forward Azimuth Indicator IP-1276/ALR-67(V) Rear Azimuth Indicator IP-1276/ALR-67(V)</p>		
Procedure	No	Yes
<div>CAUTION</div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p>NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>Pin to pin test per procedural step.</li><li>Shorts to ground.</li><li>Shorts between surrounding pins on connectors.</li><li>Shorts between shield and conductors.</li><li>Shield continuity.</li></ol>		
a. Did azimuth indicator display flashing B? .....	e	b
b. Do substeps below:		
(1) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.		
(2) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Remove forward Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00).		
(5) Open door 13L (A1-F18AC-LMM-010).		
(6) Disconnect 62P-E006B from J2 on Countermeasures Computer CP-1293( )/ALR-67(V).		

**Table 5. Azimuth Indicator Displays Flashing B (Continued)**

Procedure	No	Yes
<p>(7) Does continuity exist from:</p> <p>62P-E006B pin 29 to 62P-J008 pin 9</p> <p>62P-E006B pin 50 to 62P-J008 pin 8? .....</p>	c	d
c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step g. ....	-	-
d. Malfunction has been isolated to forward Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00) or Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00). Do step g. ....	-	-
e. Do substeps below:		
<p>(1) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.</p> <p>(2) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.</p> <p>(3) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(4) Remove rear Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00).</p> <p>(5) Open door 13L (A1-F18AC-LMM-010).</p> <p>(6) Disconnect 62P-E006B from J2 on Countermeasures Computer CP-1293( )/ALR-67(V).</p> <p>(7) Does continuity exist from:</p> <p>62P-E006B pin 29 to 62P-L027 pin 9</p> <p>62P-E006B pin 50 to 62P-L027 pin 8? .....</p>	c	f
f. Replace rear Azimuth Indicator IP-1276/ALR-67(V) (A1-F18AC-760-300, WP057 00). Do step g. ....	-	-
g. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
<p>(1) 62P-E006B</p> <p>(2) Forward Azimuth Indicator IP-1276/ALR-67(V)</p> <p>(3) Rear Azimuth Indicator IP-1276/ALR-67(V)</p> <p>(4) Door 13L .....</p>	-	-

**THIS PAGE INTENTIONALLY LEFT BLANK.**



---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TROUBLESHOOTING - BUILT-IN TEST PART 2**  
**COUNTERMEASURES WARNING AND CONTROL SYSTEM**  
**EFFECTIVITY: 161702 AND UP**

---

**Reference Material**

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Line Maintenance Access Doors .....	A1-F18AC-LMM-010

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Table 1. No Audio In Headset .....	1
Table 2. Audio Not Variable In Rear Cockpit .....	3
Table 3. Enable And/Or BIT Lights Do Not Come On .....	5
Table 4. Light(s) On RH Advisory And Threat Warning Indicator Panel Do Not Come On .....	6
Table 5. Priority Display Cycles A to N Continuously .....	8

**Record of Applicable Technical Directives**

None

**Table 1. No Audio In Headset**

<b>Support Equipment Required</b>	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
Controls, Displays and Audio Schematic (A1-F18AC-760-600, WP015 00) may be used with this procedure.	
For locator, refer to WP032 00.	

Table 1. No Audio In Headset (Continued)

Malfunction is caused by one of the items listed below:  Aircraft Wiring Countermeasures Computer CP-1293( )/ALR-67(V) Intercommunication Amplifier-Control		
Procedure	No	Yes
<div>CAUTION</div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p>NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>Pin to pin test per procedural step.</li><li>Shorts to ground.</li><li>Shorts between surrounding pins on connectors.</li><li>Shorts between shield and conductors.</li><li>Shield continuity.</li></ol>		
a. Do Intercommunication and Audio System Built-In Test (A1-F18AC-600-200, WP021 00). Was built-in test good? .....	b	c
b. Replace intercommunication amplifier-control (A1-F18AC-600-300, WP012 00).....	-	-
c. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM switch to OFF.		
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Remove intercommunication amplifier-control (A1-F18AC-600-300, WP012 00).		
(5) Open door 13L (A1-F18AC-LMM-010).		
(6) On Countermeasures Computer CP-1293( )/ALR-67(V), disconnect 62P-E006A from J1.		
(7) Does continuity exist from:		
62P-E006A pin 57 to 76P-H009B pin 47		
62P-E006A pin 34 to 76P-H009B pin 46? .....	d	e


**Table 1. No Audio In Headset (Continued)**

<b>Procedure</b>	<b>No</b>	<b>Yes</b>
d. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step f. ....	-	-
e. Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 62P-E006A		
(2) Door 13L		
(3) Intercommunication amplifier-control .....	-	-


**Table 2. Audio Not Variable In Rear Cockpit**

<b>Support Equipment Required</b>	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
Controls, Displays and Audio Schematic (A1-F18AC-760-500, WP015 00) may be used with this procedure.	
For locator, see WP032 00.	
Malfunction is caused by one of the items listed below:	
Aircraft Wiring	
Intercommunication Amplifier-Control	
Volume Control Panel Assembly	

Table 2. Audio Not Variable In Rear Cockpit (Continued)

Procedure	No	Yes
<div style="text-align: center;">  <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol> </div>		
a. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.		
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Remove intercommunication amplifier-control (A1-F18AC-600-300, WP012 00).		
(5) On volume control panel assembly, set RWR VOL control to HI. Does continuity exist from 76P-H009A pin 37 to pin 38? .....	b	e
b. Do substeps below:		
(1) Remove volume control panel assembly (A1-F18AC-600-300, WP014 00).		
(2) Does continuity exist from:		
76P-H009A pin 38 to 76P-K032 pin 20		
76P-H009A pin 37 to 76P-K032 pin 19? .....	c	d
c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step g. ....	-	-
d. Replace volume control panel assembly (A1-F18AC-600-300, WP014 00). Do step g. ....	-	-
e. Observe multimeter, and rotate RWR VOL control counterclockwise to the LOW position. Does continuity exist from HI to LOW? .....	d	f
f. Replace intercommunication amplifier-control (A1-F18AC-600-300, WP012 00). Do step g. ....	-	-
g. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) Intercommunication amplifier-control		
(2) Volume control panel assembly .....	-	-

**Table 3. ENABLE And/Or BIT Lights Do Not Come On**

Support Equipment Required				
<b>NOTE</b>				
Alternate item type designations or part numbers are listed in parentheses.				
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>			
260-6XLP (AN/USM-311)	Multimeter			
<b>Materials Required</b>				
None				
<b>NOTE</b>				
Controls, Displays and Audio Schematic (A1-F18AC-760-500, WP015 00) may be used with this procedure.				
For locator, refer to WP032 00.				
Malfunction is caused by one of the items listed below:				
Aircraft Wiring Control-Indicator C-10250/ALR-67(V) Countermeasures Computer CP-1293( )/ALR-67(V)				
<b>Procedure</b>	<b>No</b>	<b>Yes</b>		
<div></div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>1. Pin to pin test per procedural step.</li><li>2. Shorts to ground.</li><li>3. Shorts between surrounding pins on connectors.</li><li>4. Shorts between shield and conductors.</li><li>5. Shield continuity.</li></ol> <p>a. Do substeps below:</p> <div><div>(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.</div><div>(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.</div></div>				

**Table 3. ENABLE And/Or BIT Lights Do Not Come On (Continued)**

Procedure	No	Yes
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Remove RH inboard kickshield panel assembly, door CPK (A1-F18AC-LMM-010).		
(5) Disconnect 62J-J007 from P1 on Control-Indicator C-10250/ALR-67(V).		
(6) Open door 13L (A1-F18AC-LMM-010).		
(7) Disconnect 62P-E006A from J1 on Countermeasures Computer CP-1293( )/ALR-67(V).		
(8) Does continuity exist from:		
62J-J007 pin 22 to 62P-E006A pin 7		
62J-J007 pin 6 to 62P-E006A pin 59? .....	b	c
b. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step d. ....	-	-
c. Malfunction has been isolated to Control-Indicator C-10250/ALR-67(V) (A1-F18AC-760-300, WP056 00) or Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00). Do step d. ....	-	-
d. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 62J-J007		
(2) 62P-E006A		
(3) RH inboard kickshield panel assembly, door CPK		
(4) Door 13L .....	-	-

**Table 4. Light(s) On RH Advisory And Threat Warning Indicator Panel Do Not Come On**

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
Materials Required	
None	

**Table 4. Light(s) On RH Advisory And Threat Warning Indicator Panel Do Not Come On (Continued)**

NOTE		
<p>Controls, Displays and Audio Schematic (A1-F18AC-760-500, WP015 00) may be used with this procedure.</p> <p>For locator, refer to WP032 00.</p> <p>Malfunction is caused by one of the items listed below:</p> <p>Aircraft Wiring Countermeasures Computer CP-1293( )/ALR-67(V) RH Advisory and Threat Warning Indicator Panel</p>		
Procedure	No	Yes
<p style="text-align: center;"><b>CAUTION</b></p> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
a. On INTR LT control box panel assembly (cockpit, right console), set and hold LT TEST switch to TEST. Do all lights on RH advisory and threat warning indicator panel come on? .....	b	c
b. Do Cockpit Warning/Caution/Advisory Lighting System Test (A1-F18AC-440-200, WP006 00). .....	-	-
c. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.		
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Remove RH advisory and threat warning indicator panel assembly (A1-F18AC-440-300, WP022 00).		

**Table 4. Light(s) On RH Advisory And Threat Warning Indicator Panel Do Not Come On (Continued)**

Procedure	No	Yes
<p>(5) Does continuity exist from:</p> <p>52P-J074 pin 22 to pin 41</p> <p>52P-J074 pin 22 to pin 12</p> <p>52P-J074 pin 22 to pin 15</p> <p>52P-J074 pin 22 to pin 16? .....</p>	d	e
d. Replace RH advisory and threat warning indicator panel (A1-F18AC-440-300, WP022 00). Do step h. ....	-	-
e. Do substeps below:		
<p>(1) Open door 13L (A1-F18AC-LMM-010).</p> <p>(2) Disconnect 62P-E006A from J1 on Countermeasures Computer CP-1293( )/ALR-67(V).</p> <p>(3) Does continuity exist from:</p> <p>62P-E006A pin 39 to 52J-J074 pin 41</p> <p>62P-E006A pin 12 to 52J-J074 pin 12</p> <p>62P-E006A pin 13 to 52J-J074 pin 15</p> <p>62P-E006A pin 40 to 52J-J074 pin 16? .....</p>	f	g
f. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step h. ....	-	-
g. Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00). Do step h. ....	-	-
h. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
<p>(1) RH advisory and threat warning indicator panel</p> <p>(2) 62P-E006A</p> <p>(3) Door 13L .....</p>	-	-

**Table 5. Priority Display Cycles A to N Continuously**

Support Equipment Required	
NOTE	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter



**Table 5. Priority Display Cycles A to N Continuously (Continued)**

Materials Required				
Specification or Part Number	Nomenclature			
MS20995NC20	Lockwire			
<b>NOTE</b>				
Countermeasures Warning and Control System Power Interface Schematic (A1-F18AC-760-500, WP011 00) may be used with this procedure.				
For locator, refer to WP032 00.				
Malfunction is caused by one of the items listed below:				
Aircraft Wiring Control-Indicator C-10250/ALR-67(V) Integrated Antenna AS-3190A/ALR-67(V) Left Forward Radar Receiver R-2148A/ALR-67(V) Left Rear Radar Receiver R-2148A/ALR-67(V) No. 7 Circuit Breaker/Relay Panel Assembly Radar Receiver R-2055A/ALR-67(V) Right Forward Radar Receiver R-2148A/ALR-67(V) Right Rear Radar Receiver R-2148A/ALR-67(V)				
Procedure	No	Yes		
<div><b>CAUTION</b></div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>1. Pin to pin test per procedural step.</li><li>2. Shorts to ground.</li><li>3. Shorts between surrounding pins on connectors.</li><li>4. Shorts between shield and conductors.</li><li>5. Shield continuity.</li></ol> <p>a. Do substeps below:</p> <div><div><div>(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.</div><div>(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.</div><div>(3) Remove electrical power (A1-F18AC-LMM-000).</div></div></div>				

**Table 5. Priority Display Cycles A to N Continuously (Continued)**

Procedure	No	Yes
(4) Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).		
(5) On Radar Receiver R-2055A/ALR-67(V), is circuit breaker CB1 in the OFF position (tripped)? .....	b	o
b. Do substeps below:		
(1) Apply electrical power (A1-F18AC-LMM-000).		
(2) On GND PWR control panel assembly, set 3 switch to B ON and hold for 3 seconds.		
(3) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(4) Does 28vdc exist from 62P-E009M pin 36 (+) to pin 37 (-)? .....	c	j
c. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) In cockpit, remove RH inboard kickshield panel assembly, door CPK (A1-F18AC-LMM-010).		
(4) Disconnect P1 from 62J-J007.		
(5) Apply electrical power (A1-F18AC-LMM-000).		
(6) On GND PWR control panel assembly, set 3 switch to B ON and hold for 3 seconds.		
(7) Does 28vdc exist from 62J-J007 pin 4 (+) to pin 21 (-)? .....	d	h
d. Do substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		
(2) Open door 10L (A1-F18AC-LMM-010).		
(3) Disconnect 52P-C057D from no. 7 circuit breaker/relay panel assembly.		
(4) Does continuity exist from 62J-J007 pin 4 to 52P-C057D pin 88? .....	e	f
e. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step z. ....	-	-
f. Does continuity exist between 62J-J007 pin 21 and aircraft ground? .....	e	g
g. Isolate between no. 7 circuit breaker/relay panel assembly wiring, 1K-C127, and 62CBC005 (A1-F18AC-420-300, WP032 00). Do step z. ....	-	-
h. Do substeps below:		
(1) Remove electrical power (A1-F18AC-LMM-000).		

**Table 5. Priority Display Cycles A to N Continuously (Continued)**

Procedure	No	Yes
(2) Does continuity exist from: 62J-J007 pin 33 to 62P-E009M pin 37 62J-J007 pin 34 to 62P-E009M pin 36? .....	e	i
i. Replace Control-Indicator C-10250/ALR-67(V) (A1-F18AC-760-300, WP056 00). Do step z. ....	-	-
j. Does 115vac exist from 62P-E009K pin F to: pin A pin B pin C? .....	l	k
k. Replace Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00). Do step z. ....	-	-
l. Do substeps below: (1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch. (2) Remove electrical power (A1-F18AC-LMM-000). (3) Does continuity exist from 62P-E009K pin F to pin D? .....	e	m
m. Do substeps below: (1) Open door 10L (A1-F18AC-LMM-010). (2) Disconnect 52P-C057D from no. 7 circuit breaker/relay panel assembly. (3) Does continuity exist from: 62P-C057D pin 91 to 62P-E009K pin A 52P-C057D pin 102 to 62P-E009K pin B 62P-C057D pin 112 to 62P-E009K pin C? .....	e	n
n. Isolate between no. 7 circuit breaker/relay panel assembly wiring, 62CBC002, 62CBC003 and 62CBC004 (A1-F18AC-420-300, WP032 00). Do step z. ....	-	-
o. Do substeps below: (1) Open door 3 (A1-F18AC-LMM-010). (2) Disconnect connector 62P-B014A from J1 on Integrated Antenna AS-3190A/ALR-67(V). (3) Remove right forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00). (4) Remove left forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).		

**Table 5. Priority Display Cycles A to N Continuously (Continued)**

Procedure	No	Yes
<p>(5) Open doors 124L and 124R (A1-F18AC-LMM-010).</p> <p>(6) In door 124R, remove lockwire and disconnect 62P-T011A from J1 on right rear Radar Receiver R-2148A/ALR-67(V).</p> <p>(7) In door 124L, remove lockwire and disconnect 62P-S012A from J1 on left rear Radar Receiver R-2148A/ALR-67(V).</p> <p>(8) Install Radar Receiver R-2055A/ALR-67(V), and omit built-in test (BIT) (A1-F18AC-760-300, WP054 00).</p> <p>(9) Apply electrical power (A1-F18AC-LMM-000).</p> <p>(10) On GND PWR control panel assembly, set 3 switch to B ON and hold for 3 seconds.</p> <p>(11) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.</p> <p>(12) On azimuth indicator, does the priority display in the status circle indicate a steady A? .....</p>	p	q
<p>p. Do substeps below:</p> <p>(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.</p> <p>(2) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(3) Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).</p> <p>(4) Does continuity exist from 62P-E009K pin D to:</p> <p>62P-E009M pin 15</p> <p>62P-E009M pin 17</p> <p>62P-E009M pin 18</p> <p>62P-E009L pin 1</p> <p>62P-E009L pin 2</p> <p>62P-E009L pin 3</p> <p>62P-E009L pin 33</p> <p>62P-E009L pin 4</p> <p>62P-E009L pin 5</p> <p>62P-E009L pin 6</p> <p>62P-E009L pin 35</p> <p>62P-E009L pin 7</p> <p>62P-E009L pin 8</p> <p>62P-E009L pin 9</p> <p>62P-E009L pin 16</p> <p>62P-E009L pin 10</p> <p>62P-E009L pin 11</p> <p>62P-E009L pin 12</p> <p>62P-E009L pin 18? .....</p>	k	e

**Table 5. Priority Display Cycles A to N Continuously (Continued)**

Procedure	No	Yes
<p>q. Do substeps below:</p> <p>(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.</p> <p>(2) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(3) In door 3, connect 62P-B014A to J1 on Integrated Antenna AS-3190A/ALR-67(V).</p> <p>(4) Apply electrical power (A1-F18AC-LMM-000).</p> <p>(5) On GND PWR control panel assembly, set 3 switch to B ON and hold for 3 seconds.</p> <p>(6) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.</p> <p>(7) On azimuth indicator, does the priority display in the status circle indicate a steady A? .....</p>	r	s
<p>r. Replace Integrated Antenna AS-3190A/ALR-67(V) (A1-F18AC-760-300, WP048 00). Do step z. ....</p>	-	-
<p>s. Do substeps below:</p> <p>(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.</p> <p>(2) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(3) Install left forward Radar Receiver R-2148A/ALR-67(V) and omit BIT (A1-F18AC-760-300, WP043 00).</p> <p>(4) Apply electrical power (A1-F18AC-LMM-000).</p> <p>(5) On GND PWR control panel assembly, set 3 switch to B ON and hold for 3 seconds.</p> <p>(6) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.</p> <p>(7) On azimuth indicator, does the priority display in the status circle indicate a steady A? .....</p>	t	u
<p>t. Replace left forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00). Do step z. ....</p>	-	-
<p>u. Do substeps below:</p> <p>(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.</p> <p>(2) Remove electrical power (A1-F18AC-LMM-010).</p> <p>(3) Install right forward Radar Receiver R-2148A/ALR-67(V) and omit BIT (A1-F18AC-760-300, WP043 00).</p> <p>(4) Apply electrical power (A1-F18AC-LMM-000).</p> <p>(5) On GND PWR control panel assembly, set 3 switch to B ON and hold for 3 seconds.</p> <p>(6) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.</p>		

**Table 5. Priority Display Cycles A to N Continuously (Continued)**

Procedure	No	Yes
(7) On azimuth indicator, does the priority display in the status circle indicate a steady A? .....	v	w
v. Replace right forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00). Do step z. ....	-	-
w. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) In door 124L, connect 62P-S012A to J1 on left rear Radar Receiver R-2148A/ALR-67(V) and safety with lockwire.		
(4) Apply electrical power (A1-F18AC-LMM-000).		
(5) On GND PWR control panel assembly, set 3 switch to B ON and hold for 3 seconds.		
(6) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(7) On azimuth indicator, does the priority display in the status circle indicate a steady A? .....	x	y
x. Replace left rear Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP050 00). Do step z. ....	-	-
y. Replace right rear Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP050 00). Do step z. ....	-	-
z. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 62J-J007		
(2) 52P-C057D		
(3) 62P-B014A		
(4) 62P-T011A (safety with lockwire)		
(5) 62P-S012A (safety with lockwire)		
(6) Radar Receiver R-2055A/ALR-67(V)		
(7) Right forward Radar Receiver R-2148A/ALR-67(V)		
(8) Left forward Radar Receiver R-2148A/ALR-67(V)		
(9) RH inboard kickpanel assembly, door CPK		
(10) Door 3		
(11) Door 124R		
(12) Door 124L .....	-	-

---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TROUBLESHOOTING - BUILT-IN TEST PART 3**  
**COUNTERMEASURES WARNING AND CONTROL SYSTEM**  
**EFFECTIVITY: 161702 AND UP**

---

**Reference Material**

Line Maintenance Procedures ..... A1-F18AC-LMM-000  
Line Maintenance Access Doors ..... A1-F18AC-LMM-010

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Table 1. BIT Status Page 1 Displays Failure .....	1
Table 2. 126 or 126D Displayed .....	3
Table 3. HRM, HRM V or HRM C Displayed .....	6
Table 4. IB Displayed .....	9

**Record of Applicable Technical Directives**

<b>Type/ Number</b>	<b>Date</b>	<b>Title and ECP No.</b>	<b>Date Incorp.</b>	<b>Remarks</b>
AFC-253	—	US Naval Reserves A+ Avionics Upgrade; Incorporation of (ECP MDA-F/A-18-0560R1)	1 Jan 01	—
AFC-292	—	US Marine Corps Reserves A+ Avionics Upgrade; Incorporation of (ECP MDA-F/A-18-0583)	1 Jan 01	—

**Table 1. BIT Status Page 1 Displays Failure**

<b>Failure Indication</b>	<b>Remedy</b>
<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">1</div> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">2</div> <div>R in up- per left quadrant</div> </div>	<ol style="list-style-type: none"> <li>1. Replace left forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).</li> <li>2. If malfunction still exists, do table 1 (WP036 00).</li> </ol>
<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">1</div> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">2</div> <div>R in up- per right quadrant</div> </div>	<ol style="list-style-type: none"> <li>1. Replace right forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).</li> <li>2. If malfunction still exists, do table 1 (WP036 00).</li> </ol>

Table 1. BIT Status Page 1 Displays Failure (Continued)

Failure Indication	Remedy
<div>1</div> <div>2</div> R in lower left quadrant	1. Replace left rear Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP050 00). 2. If malfunction still exists, do table 1 (WP036 00).
<div>1</div> <div>2</div> R in lower right quadrant	1. Replace right rear Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP050 00). 2. If malfunction still exists, do table 1 (WP036 00).
<div>1</div> C	1. Replace Control-Indicator C-10250/ALR-67(V) (A1-F18AC-760-300, WP056 00). 2. If malfunction still exists, do table 1 (WP038 00).
<div>1</div> <div>3</div> S	1. Replace Radar Receiver R-2055A/ALR-67(V) (Special Receiver) (A1-F18AC-760-300, WP054 00). 2. If malfunction still exists, do table 2 (WP038 00).
A	Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00).
<div>1</div> L	1. Replace Integrated Antenna AS-3190A/ALR-67(V) (A1-F18AC-760-300, WP048 00). 2. If malfunction still exists, do table 3 (WP038 00).
T	Do table 4 (WP033 00).
<b>LEGEND</b> <div>1</div> If WRA was replaced before test and malfunction still exists, or more than one failure indication exists, start troubleshooting at step 2. <div>2</div> If more than one Radar Receiver R-2148A/ALR-67(V) fails, do table 1 (WP036 00). <div>3</div> If Radar Receiver(s) R-2148A/ALR-67(V) malfunction also exists, do remedy for the applicable Radar Receiver(s) R-2148A/ALR-67(V) first.	



**Table 2. 126 or 126D Displayed**


Support Equipment Required							
<p><b>NOTE</b></p> <p>Alternate item type designations or part numbers are listed in parentheses.</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top; padding-bottom: 10px;"> <p><b>Part Number or Type Designation</b></p> <p>260-6XLP (AN/USM-311)</p> </td> <td style="width: 50%; vertical-align: top; padding-bottom: 10px;"> <p><b>Nomenclature</b></p> <p>Multimeter</p> </td> </tr> </table> <p style="text-align: center;"><b>Materials Required</b></p> <p style="text-align: center;">None</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Integration Schematic (A1-F18AC-760-500, WP013 00) may be used with this procedure.</p> <p>For locator, see WP032 00.</p> <p>Malfunction is caused by one of the items below:</p> <p style="margin-left: 20px;">Aircraft Wiring Countermeasures Computer CP-1293( )/ALR-67(V) Receiver-Transmitter RT-1079B/ALQ-126</p>			<p><b>Part Number or Type Designation</b></p> <p>260-6XLP (AN/USM-311)</p>	<p><b>Nomenclature</b></p> <p>Multimeter</p>			
<p><b>Part Number or Type Designation</b></p> <p>260-6XLP (AN/USM-311)</p>	<p><b>Nomenclature</b></p> <p>Multimeter</p>						
<b>Procedure</b>	<b>No</b>	<b>Yes</b>					
<div style="text-align: center; margin-bottom: 20px;">  </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol> <table style="width: 100%; border: none; margin-top: 20px;"> <tr> <td style="width: 80%; border: none;"> <p>a. Is 126 displayed on BIT status page 2? .....</p> </td> <td style="width: 5%; border: none; text-align: center; vertical-align: bottom;"> </td> <td style="width: 10%; border: none; text-align: center; vertical-align: bottom;">g</td> <td style="width: 5%; border: none; text-align: center; vertical-align: bottom;"> </td> <td style="width: 10%; border: none; text-align: center; vertical-align: bottom;">b</td> </tr> </table>			<p>a. Is 126 displayed on BIT status page 2? .....</p>		g		b
<p>a. Is 126 displayed on BIT status page 2? .....</p>		g		b			

Table 2. 126 or 126D Displayed (Continued)

Procedure	No	Yes
<b>NOTE</b>		
Countermeasures set system being turned off will cause 126 to be displayed.		
b. Has countermeasures set (ALQ-126) system been turned off? .....	d	c
c. Do substeps below:		
(1) On ECM control panel assembly, set ECM mode switch to STBY.		
(2) Allow approximately 4 minutes for Receiver-Transmitter RT-1079B/ALQ-126 to warm up (STBY light on LH advisory and threat warning panel goes out).		
(3) Do Radar Warning System Built-In Test (WP031 00). .....	-	-
<b>NOTE</b>		
Countermeasures set built-in test being run at the same time as radar warning system built-in test will cause 126 to be displayed.		
d. Was countermeasures set built-in test done while radar warning system built-in test was being run? .....	e	f
e. Do Countermeasures Set Built-In Test (WP014 00). If test good, replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00). .....	-	-
f. Do Radar Warning System Built-In Test (WP031 00). .....	-	-
g. Was Countermeasures Computer CP-1293( )/ALR-67(V) good for BIT? .....	h	i
h. Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00). .....	-	-
i. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) On ECM control panel assembly, set ECM mode switch to OFF.		
(3) Open door 13L (A1-F18AC-LMM-010).		
(4) Disconnect 62P-E006B from J2 on Countermeasures Computer CP-1293( )/ALR-67(V).		
(5) Open door 14L (A1-F18AC-LMM-010).		
(6) Disconnect 64P-E001F from 3J6 on Receiver-Transmitter RT-1079B/ALQ-126.		

Table 2. 126 or 126D Displayed (Continued)

Procedure	No	Yes
<p>(7) Does continuity exist from:</p> <p>62P-E006B pin 22 to 64P-E001F pin Y</p> <p>62P-E006B pin 76 to 64P-E001F pin Z</p> <p>62P-E006B pin 75 to 64P-E001F pin b</p> <p>62P-E006B pin 45 to 64P-E001F pin c</p> <p>62P-E006B pin 63 to 64P-E001F pin e</p> <p>62P-E006B pin 64 to 64P-E001F pin f</p> <p>62P-E006B pin 43 to 64P-E001F pin h</p> <p>62P-E006B pin 19 to 64P-E001F pin k</p> <p>62P-E006B pin 44 to 64P-E001F pin n</p> <p>62P-E006B pin 20 to 64P-E001F pin p</p> <p>62P-E006B pin 61 to 64P-E001F pin r</p> <p>62P-E006B pin 18 to 64P-E001F pin s? .....</p>	j	k
j. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step o. ....	-	-
<p>k. Does continuity exist from:</p> <p>62P-E006B pin 73 to 64P-E001F pin A</p> <p>62P-E006B pin 16 to 64P-E001F pin B</p> <p>62P-E006B pin 41 to 64P-E001F pin D</p> <p>62P-E006B pin 15 to 64P-E001F pin E</p> <p>62P-E006B pin 79 to 64P-E001F pin G</p> <p>62P-E006B pin 40 to 64P-E001F pin H</p> <p>62P-E006B pin 60 to 64P-E001F pin L</p> <p>62P-E006B pin 14 to 64P-E001F pin M</p> <p>62P-E006B pin 59 to 64P-E001F pin P</p> <p>62P-E006B pin 72 to 64P-E001F pin R</p> <p>62P-E006B pin 39 to 64P-E001F pin x</p> <p>62P-E006B pin 13 to 64P-E001F pin y</p> <p>62P-E006B pin 17 to 64P-E001F pin T</p> <p>62P-E006B pin 42 to 64P-E001F pin U? .....</p>	j	l
<p>l. Does continuity exist from:</p> <p>62P-E006B pin 71 to 64P-E001F pin v</p> <p>62P-E006B pin 11 to 64P-E001F pin u? .....</p>	j	m
<p>m. Does continuity exist from:</p> <p>62P-E006B pin 29 to 64P-E001F pin DD</p> <p>62P-E006B pin 50 to 64P-E001F pin EE? .....</p>	j	n
n. Replace Receiver-Transmitter RT-1079B/ALQ-126 (A1-F18AC-760-300, WP010 02). Do step o. ....	-	-


**Table 2. 126 or 126D Displayed (Continued)**

Procedure	No	Yes
o. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 62P-E006B		
(2) 64P-E001F		
(3) Door 13L		
(4) Door 14L .....	-	-

**Table 3. HRM, HRM V or HRM C Displayed**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
Integration Schematic (A1-F18AC-760-500, WP013 00) may be used with this procedure.	
For locator, see WP032 00.	
Malfunction is caused by one of the items below:	
Aircraft Wiring	
Command Launch Computer CP-1001( )/AWG	
Countermeasures Computer CP-1293( )/ALR-67(V)	

**Table 3. HRM, HRM V or HRM C Displayed (Continued)**

Procedure	No	Yes
<div style="text-align: center;">  <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol> </div>		
a. Is HRM displayed on BIT status page 2? .....	b	c
b. Is HRM V displayed on BIT status page 2? .....	i	d
c. Do Stores Management System Initiated Built-In Test (A1-F18AC-740-200, WP009 00). If test good, replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00). .....	-	-
d. Do Stores Management System Initiated Built-In Test (A1-F18AC-740-200, WP009 00). Did Command Launch Computer CP-1001( )/AWG test good? .....	e	f
e. Do applicable troubleshooting (A1-F18AC-740-200, WP009 00) and then Countermeasures Warning and Control System Built-In Test (WP031 00). .....	-	-
f. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.		
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Open door 13L (A1-F18AC-LMM-010).		
(5) Disconnect 62P-E006B from J2 on Countermeasures Computer CP-1293( )/ALR-67(V).		
(6) Open door 13R (A1-F18AC-LMM-010).		
(7) Disconnect 61P-F010B from J2 on Command Launch Computer CP-1001( )/AWG.		

**Table 3. HRM, HRM V or HRM C Displayed (Continued)**

Procedure	No	Yes
<p>(8) Does continuity exist from:</p> <p>62P-E006B pin 78 to 61P-F010B pin 73</p> <p>62P-E006B pin 70 to 61P-F010B pin 74</p> <p>62P-E006B pin 62 to 61P-F010B pin 72</p> <p>62P-E006B pin 74 to 61P-F010B pin 71</p> <p>62P-E006B pin 48 to 61P-F010B pin 60</p> <p>62P-E006B pin 47 to 61P-F010B pin 61? .....</p>	g	h
g. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step k. ....	-	-
h. Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00). Do step k. ....	-	-
i. Do Stores Management System Initiated Built-In Test (A1-F18AC-740-200, WP009 00). Did Command Launch Computer CP-1001( )/AWG test good? .....	e	j
<p>j. Do substeps below:</p> <p>(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.</p> <p>(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.</p> <p>(3) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(4) Open door 13L (A1-F18AC-LMM-010).</p> <p>(5) Disconnect 62P-E006B from J2 on Countermeasures Computer CP-1293( )/ALR-67(V).</p> <p>(6) Open door 13R (A1-F18AC-LMM-010).</p> <p>(7) Disconnect 61P-F010B from J2 on Command Launch Computer CP-1001( )/AWG.</p> <p>(8) Does continuity exist from:</p> <p>62P-E006B pin 67 to 61P-F010B pin 38</p> <p>62P-E006B pin 66 to 61P-F010B pin 39</p> <p>62P-E006B pin 49 to 61P-F010B pin 58</p> <p>62P-E006B pin 26 to 61P-F010B pin 59</p> <p>62P-E006B pin 24 to 61P-F010B pin 12</p> <p>62P-E006B pin 25 to 61P-F010B pin 13? .....</p>	g	h
<p>k. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:</p> <p>(1) 62P-E006B</p> <p>(2) 61P-F010B</p> <p>(3) Door 13L</p> <p>(4) Door 13R .....</p>	-	-

**Table 4. IB Displayed**


<b>Support Equipment Required</b>					
<p><b>NOTE</b></p> <p>Alternate item type designations or part numbers are listed in parentheses.</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top; padding-bottom: 10px;"> <p><b>Part Number or Type Designation</b></p> <p>77/BN</p> </td> <td style="width: 50%; vertical-align: top; padding-bottom: 10px;"> <p><b>Nomenclature</b></p> <p>Multimeter</p> </td> </tr> </table> <p style="text-align: center;"><b>Materials Required</b></p> <p style="text-align: center;">None</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Interference Blanker System Schematic (A1-F18AC-760-500, WP004 00) and Video Processing and Control Schematic (A1-F18AC-760-500) may be used with this procedure.</p> <p>For locator, see WP032 00.</p> <p>Malfunction is caused by one of the items below:</p> <div style="margin-left: 20px;"> <p>Aircraft Wiring</p> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px 5px; margin-right: 5px;">1</div> <div>Interference Blanker MX-9965/A</div> </div> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px 5px; margin-right: 5px;">2</div> <div>Interference Blanker MX-11741/A</div> </div> <p>Countermeasures Computer CP-1293( )/ALR-67(V)</p> </div>			<p><b>Part Number or Type Designation</b></p> <p>77/BN</p>	<p><b>Nomenclature</b></p> <p>Multimeter</p>	
<p><b>Part Number or Type Designation</b></p> <p>77/BN</p>	<p><b>Nomenclature</b></p> <p>Multimeter</p>				
<b>Procedure</b>	<b>No</b>	<b>Yes</b>			
<div style="text-align: center; margin-bottom: 20px;">  </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol> <table style="width: 100%; border-collapse: collapse; margin-top: 20px;"> <tr> <td style="width: 80%; border-right: 1px solid black; padding: 5px; vertical-align: top;"> <p>a. Do interference blanker system built-in test (WP003 00). Did interference blanker system test good? .....</p> </td> <td style="width: 10%; border-right: 1px solid black; text-align: center; padding: 5px; vertical-align: bottom;">b</td> <td style="width: 10%; text-align: center; padding: 5px; vertical-align: bottom;">c</td> </tr> </table>			<p>a. Do interference blanker system built-in test (WP003 00). Did interference blanker system test good? .....</p>	b	c
<p>a. Do interference blanker system built-in test (WP003 00). Did interference blanker system test good? .....</p>	b	c			

Table 4. IB Displayed (Continued)

Procedure	No	Yes
b. Do applicable troubleshooting (WP003 00) and then countermeasures warning system built-in test (WP031 00). . . . .	-	-
c. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.		
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Open door 13R (A1-F18AC-LMM-010).		
(5) Disconnect 66P-F001C from J3 on interference blanker.		
(6) Open door 13L (A1-F18AC-LMM-010).		
(7) Disconnect 62P-E006A from J1 on Countermeasures Computer CP-1293( )/ALR-67(V).		
(8) Does continuity exist from:		
62P-E006A pin 74 to 66P-F001C pin 16		
62P-E006A pin 73 to 66P-F001C pin 13		
62P-E006A pin 16 to 66P-F001C pin 7		
62P-E006A pin 79 to 66P-F001C pin 8		
62P-E006A pin 42 to 66P-F001C pin 6		
62P-E006A pin 41 to 66P-F001C pin 5		
62P-E006A pin 33 to 66P-F001C pin 49		
62P-E006A pin 32 to 66P-F001C pin 51? . . . . .	d	e
d. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step h. . . . .	-	-
e. Do substeps below:		
(1) In door 13L, disconnect 62P-E006B from J2 on Countermeasures Computer CP-1293( )/ALR-67(V).		
(2) In door 13R, disconnect 66P-F001A from J1 on interference blanker.		
(3) Does continuity exist from:		
62P-E006B pin 9 to 66P-F001A pin V		
62P-E006B pin 3 to 66P-F001A pin J		
62P-E006B pin 68 to 66P-F001A pin L		
On 161702 THRU 161736, 62P-E006B pin 10 to 66P-F001A pin X		
On 161737 AND UP, 62P-E006B pin 56 to 66P-F001A pin X? . . . . .	d	f
f. Does continuity exist from:		
62P-E006B pin 69 to 66P-F001C pin 21		
62P-E006B pin 54 to 66P-F001C pin 31? . . . . .	d	g



**Table 4. IB Displayed (Continued)**

Procedure	No	Yes
g. Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00). Do step h. ....	-	-
h. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 62P-E006A		
(2) 62P-E006B		
(3) 66P-F001A		
(4) 66P-F001C		
(5) Door 13L		
(6) Door 13R . . . . .	-	-
<b>LEGEND</b>		
<div> <div>1</div> <div>On F/A-18A before F/A-18 AFC 253 or F/A-18 AFC 292 and F/A-18B.</div> </div>		
<div> <div>2</div> <div>On F/A-18A 162394 thru 163175 after F/A-18 AFC 253 or F/A-18 AFC 292.</div> </div>		

**THIS PAGE INTENTIONALLY LEFT BLANK.**

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TROUBLESHOOTING - BUILT-IN TEST PART 4**  
**COUNTERMEASURES WARNING AND CONTROL SYSTEM**  
**EFFECTIVITY: 161702 AND UP**

**Reference Material**

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Line Maintenance Access Doors .....	A1-F18AC-LMM-010

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Table 1. Radar Receiver R-2148A/ALR-67(V) BIT Failure .....	1
Table 2. Right Forward and Right Rear Radar Receivers Fail BIT .....	2
Table 3. Left Forward and Left Rear Radar Receivers Fail BIT .....	4
Table 4. All Four Radar Receivers Fail BIT .....	5
Table 5. Right Rear Radar Receiver Fails BIT .....	7

**Record of Applicable Technical Directives**

None

**Table 1. Radar Receiver R-2148A/ALR-67(V) BIT Failure**

Support Equipment Required		
None		
Materials Required		
None		
Procedure	No	Yes
a. Does malfunction exist in more than one Radar Receiver R-2148A/ALR-67(V)? .....	b	e
b. Does malfunction exist for left forward Radar Receiver R-2148A/ALR-67(V)? .....	c	q
c. Does malfunction exist for right forward Radar Receiver R-2148A/ALR-67(V)? .....	d	p
d. Does malfunction exist for left rear Radar Receiver R-2148A/ALR-67(V)? .....	n	o
e. Does malfunction exist for all four Radar Receivers R-2148A/ALR-67(V)? .....	f	m
f. Does malfunction exist for left forward Radar Receiver R-2148A/ALR-67(V) and right forward Radar Receiver R-2148A/ALR-67(V)? .....	g	i


**Table 1. Radar Receiver R-2148A/ALR-67(V) BIT Failure (Continued)**

Procedure	No	Yes
g. Does malfunction exist for left rear Radar Receiver R-2148A/ALR-67(V) and right rear Radar Receiver R-2148A/ALR-67(V)? .....	h	j
h. Does malfunction exist for left forward Radar Receiver R-2148A/ALR-67(V) and left rear Radar Receiver R-2148A/ALR-67(V)? .....	l	k
i. Do Right and Left Forward Local Oscillator Line Insertion Loss Test (WP039 05). If test good, replace Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00). .....	-	-
j. Do Right and Left Rear Local Oscillator Line Insertion Loss Test (WP039 02). If test good, replace Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00). .....	-	-
k. Do table 3 (WP036 00). .....	-	-
l. Do table 2 (WP036 00). .....	-	-
m. Do table 4 (WP036 00). .....	-	-
n. Do table 5 (WP036 00). .....	-	-
o. Do table 1 (WP037 00). .....	-	-
p. Do table 2 (WP037 00). .....	-	-
q. Do table 3 (WP037 00). .....	-	-

**Table 2. Right Forward and Right Rear Radar Receivers Fail BIT**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
RF Detection and Conversion Schematic (A1-F18AC-760-500, WP012 00) may be used with this procedure.	
For locator, see WP032 00.	
Malfunction is caused by one of the items below:	
Aircraft Wiring Countermeasures Computer CP-1293( )/ALR-67(V)	

**Table 2. Right Forward and Right Rear Radar Receivers Fail BIT (Continued)**

Procedure	No	Yes
<div style="text-align: center;">  <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol> </div>		
a. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.		
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Remove Right Forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).		
(5) Open door 13L (A1-F18AC-LMM-010).		
(6) Disconnect 62P-E006A from J1 on Countermeasures Computer CP-1293( )/ALR-67(V).		
(7) Does continuity exist from 62P-B010A pin 19 to 62P-E006A pin 68? .....	b	c
b. Isolate defective aircraft wiring between 62P-E006A pin 68 and WTE003 pin 98 (A1-F18A( )-WDM-000). Do step f. ....	-	-
c. Does continuity exist from 62P-B010A pin 10 to 62P-E006A pin 2? .....	d	e
d. Isolate defective aircraft wiring between 62P-E006A pin 2 and WTE003 pin 99 (A1-F18A( )-WDM-000). Do step f. ....	-	-
e. Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) Right Forward Radar Receiver R-2148A/ALR-67(V)		
(2) 62P-E006A		
(3) Door 13L .....	-	-

**Table 3. Left Forward and Left Rear Radar Receivers Fail BIT**

Support Equipment Required		
<b>NOTE</b>		
Alternate item type designations or part numbers are listed in parentheses.		
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>	
260-6XLP (AN/USM-311)	Multimeter	
<b>Materials Required</b>		
None		
<b>NOTE</b>		
RF Detection and Conversion Schematic (A1-F18AC-760-500, WP012 00) may be used with this procedure.		
For locator, see WP032 00.		
Malfunction is caused by one of the items below:		
Aircraft Wiring Countermeasures Computer CP-1293( )/ALR-67(V)		
Procedure	No	Yes
<div>CAUTION</div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>1. Pin to pin test per procedural step.</li><li>2. Shorts to ground.</li><li>3. Shorts between surrounding pins on connectors.</li><li>4. Shorts between shield and conductors.</li><li>5. Shield continuity.</li></ol> <p>a. Do substeps below:</p> <ol style="list-style-type: none"><li>(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.</li><li>(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.</li></ol>		

**Table 3. Left Forward and Left Rear Radar Receivers Fail BIT (Continued)**

Procedure	No	Yes
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Remove left forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP050 00).		
(5) Open door 13L (A1-F18AC-LMM-010).		
(6) Disconnect 62P-E006A from J1 on Countermeasures Computer CP-1293( )/ALR-67(V).		
(7) Does continuity exist from 62P-A013A pin 19 to 62P-E006A pin 77? .....	b	c
b. Isolate defective aircraft wiring between 62P-E006A pin 77 and WTE003 pin 101 (A1-F18A( )-WDM-000). Do step f. ....	-	-
c. Does continuity exist from 62P-A013A pin 10 to 62P-E006A pin 3? .....	d	e
d. Isolate defective aircraft wiring between 62P-E006A pin 3 and WTE003 pin 102 (A1-F18A( )-WDM-000). Do step f. ....	-	-
e. Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) Left forward Radar Receiver R-2148A/ALR-67(V)		
(2) 62P-E006A		
(3) Door 13L .....	-	-

**Table 4. All Four Radar Receivers Fail BIT**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
Materials Required	
None	

Table 4. All Four Radar Receivers Fail BIT (Continued)

NOTE		
RF Detection and Conversion Schematic (A1-F18AC-760-500, WP012 00) and Power Interface Schematic (A1-F18AC-760-500, WP011 00) may be used with this procedure.		
For locator, see WP032 00.		
Malfunction is caused by one of the items below:		
Aircraft Wiring Countermeasures Computer CP-1293( )/ALR-67(V) Radar Receiver R-2055A/ALR-67(V)		
Procedure	No	Yes
<div>CAUTION</div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p>NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>Pin to pin test per procedural step.</li><li>Shorts to ground.</li><li>Shorts between surrounding pins on connectors.</li><li>Shorts between shield and conductors.</li><li>Shield continuity.</li></ol>		
a. Was Countermeasures Computer CP-1293( )/ALR-67(V) good for BIT? .....	b	c
b. Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00). Do step f. ....	-	-
c. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.		
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Open door 13L (A1-F18AC-LMM-010).		
(5) Disconnect 62P-E006A from J1 on Countermeasures Computer CP-1293( )/ALR-67(V).		
(6) Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).		




**Table 4. All Four Radar Receivers Fail BIT (Continued)**

Procedure	No	Yes
(7) Does continuity exist from:  62P-E006A pin 61 to 62P-E009M pin 10 62P-E006A pin 17 to 62P-E009M pin 25 62P-E006A pin 43 to 62P-E009M pin 8 62P-E006A pin 18 to 62P-E009M pin 24? .....	d	e
d. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step f. ....	-	-
e. Replace Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00). Do step f. ....	-	-
f. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:  (1) 62P-E006A  (2) Radar Receiver R-2055A/ALR-67(V)  (3) Door 13L .....	-	-

**Table 5. Right Rear Radar Receiver Fails BIT**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
RF Detection and Conversion Schematic (A1-F18AC-760-500, WP012 00) and Power Interface Schematic (A1-F18AC-760-500, WP011 00) may be used with this procedure.	
For locator, see WP032 00.	

**Table 5. Right Rear Radar Receiver Fails BIT (Continued)**

Malfunction is caused by one of the items below:		
Aircraft Wiring ALR-67 Coax Cable SW420 ALR-67 Coax Cable SW423 ALR-67 Coax Cable SW520 Countermeasures Computer CP-1293( )/ALR-67(V) Radar Receiver R-2055A/ALR-67(V) Right Rear Radar Receiver R-2148A/ALR-67(V)		
Procedure	No	Yes
<div style="text-align: center;">  <p>CAUTION</p> </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
a. Did special BIT display indicate a 135° quad video and a 135° quad rf failure? .....	b	i
b. Did special BIT display indicate a 135° quad rf failure? .....	c	h
c. Did special BIT display indicate a PCU DMA failure? .....	e	d
d. Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00). Do step q. ....	-	-
e. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.		
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Open door 124R (A1-F18AC-LMM-010).		
(5) Remove lockwire and disconnect 62P-T011A from J1 on right rear Radar Receiver R-2148A/ALR-67(V).		
(6) Open door 13L (A1-F18AC-LMM-010).		

**Table 5. Right Rear Radar Receiver Fails BIT (Continued)**

Procedure	No	Yes
(7) Disconnect 62P-E006A from J1 on Countermeasures Computer CP-1293( )/ALR-67(V).		
(8) Does continuity exist from 62P-E006A pin 29 to 62P-T011A pin 11? .....	f	g
f. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step q. ....	-	-
g. Malfunction has been isolated to Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00) or right rear Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP050 00). Do step q. ....	-	-
h. Do Right Rear High Band IF Line Insertion Loss Test (WP039 03). If test good, malfunction has been isolated to Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00) or right rear Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP050 00). Do step q. ....	-	-
i. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.		
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Open door 124R (A1-F18AC-LMM-010).		
(5) Remove lockwire and disconnect 62P-T011A from J1 on right rear Radar Receiver R-2148A/ALR-67(V).		
(6) Apply electrical power (A1-F18AC-LMM-000).		
(7) On GND PWR control panel assembly, set 3 switch to B ON and hold for 3 seconds.		
(8) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(9) Does 5vdc exist from 62P-T011A pin 14 (+) to pin 21 (-)? .....	m	j
j. Does 5vdc exist from 62P-T011A pin 16 (+) to pin 22 (-)? .....	m	k
k. Does 15vdc exist from 62P-T011A pin 1 (+) to pin 15 (-)? .....	m	l
l. Does -15vdc exist from 62P-T011A pin 2 (+) to pin 3 (-)? .....	m	o
m. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).		

**Table 5. Right Rear Radar Receiver Fails BIT (Continued)**

Procedure	No	Yes
<p>(4) Does continuity exist from:</p> <p>62P-T011A pin 14 to 62P-E009L pin 4</p> <p>62P-T011A pin 21 to 62P-E009L pin 21</p> <p>62P-T011A pin 16 to 62P-E009L pin 35</p> <p>62P-T011A pin 22 to 62P-E009L pin 36</p> <p>62P-T011A pin 1 to 62P-E009L pin 5</p> <p>62P-T011A pin 15 to 62P-E009L pin 22</p> <p>62P-T011A pin 2 to 62P-E009L pin 6</p> <p>62P-T011A pin 3 to 62P-E009L pin 34? .....</p>	f	n
n. Replace Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00). Do step q. ....	-	-
o. Do substeps below:		
<p>(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.</p> <p>(2) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(3) Open door 13L (A1-F18AC-LMM-010).</p> <p>(4) Disconnect 62P-E006A from J1 on Countermeasures Computer CP-1293( )/ALR-67(V).</p> <p>(5) Does continuity exist from:</p> <p>62P-T011A pin 19 to 62P-E006A pin 68</p> <p>62P-T011A pin 10 to 62P-E006A pin 2</p> <p>62P-T011A pin 18 to 62P-E006A pin 16</p> <p>62P-T011A pin 7 to 62P-E006A pin 79</p> <p>62P-T011A pin 9 to 62P-E006A pin 74</p> <p>62P-T011A pin 8 to 62P-E006A pin 73</p> <p>62P-T011A pin 17 to 62P-E006A pin 42</p> <p>62P-T011A pin 6 to 62P-E006A pin 41? .....</p>	f	p
p. Do Right Rear Local Oscillator Line Insertion Loss Test (WP039 02). If test good, malfunction has been isolated to Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00) or right rear Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP050 00). Do step q. ....	-	-
q. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
<p>(1) 62P-T011A (safety with lockwire)</p> <p>(2) 62P-E006A</p> <p>(3) Door 13L</p> <p>(4) Door 124R</p> <p>(5) Radar Receiver R-2055A/ALR-67(V) .....</p>	-	-

---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TROUBLESHOOTING - BUILT-IN TEST PART 5**  
**COUNTERMEASURES WARNING AND CONTROL SYSTEM**  
**EFFECTIVITY: 161702 AND UP**

---

**Reference Material**

Line Maintenance Procedures . . . . . A1-F18AC-LMM-000  
Line Maintenance Access Doors . . . . . A1-F18AC-LMM-010

**Alphabetical Index**

Subject	Page No.
Table 1. Left Rear Radar Receiver Fails BIT . . . . .	1
Table 2. Right Forward Radar Receiver Fails BIT . . . . .	5
Table 3. Left Forward Radar Receiver Fails BIT . . . . .	8


**Record of Applicable Technical Directives**

None

**Table 1. Left Rear Radar Receiver Fails BIT**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
RF Detection and Conversion Schematic (A1-F18AC-760-500, WP012 00) and Power Interface Schematic (A1-F18AC-760-500, WP011 00) may be used with this procedure.	
For locator, see WP032 00.	

**Table 1. Left Rear Radar Receiver Fails BIT (Continued)**

Malfunction is caused by one of the items below:		
Aircraft Wiring ALR-67 Coax Cable SW422 ALR-67 Coax Cable SW424 ALR-67 Coax Cable SW522 Countermeasures Computer CP-1293( )/ALR-67(V) Left Rear Radar Receiver R-2148A/ALR-67(V) Radar Receiver R-2055A/ALR-67(V)		
Procedure	No	Yes
<div style="text-align: center;">  <p>CAUTION</p> </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
a. Did special BIT display indicate a 225° quad video and a 225° quad rf failure? .....	b	i
b. Did special BIT display indicate a 225° quad rf failure? .....	c	h
c. Did special BIT display indicate a PCU DMA failure? .....	e	d
d. Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00). .....	-	-
e. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.		
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Open door 124L (A1-F18AC-LMM-010).		
(5) Remove lockwire and disconnect 62P-S012A from J1 on left rear Radar Receiver R-2148A/ALR-67(V).		
(6) Open door 13L (A1-F18AC-LMM-010).		

**Table 1. Left Rear Radar Receiver Fails BIT (Continued)**


Procedure	No	Yes
(7) Disconnect 62P-E006A from J1 on Countermeasures Computer CP-1293( )/ALR-67(V).		
(8) Does continuity exist from 62P-E006A pin 47 to 62P-S012A pin 11? .....	f	g
f. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step q. ....	-	-
g. Malfunction has been isolated to Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00) or left rear Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP050 00). Do step q. ....	-	-
h. Do Left Rear High Band IF Line Insertion Loss Test (WP039 03). If test good, malfunction has been isolated to Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00) or left rear Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP050 00). Do step q. ....	-	-
i. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.		
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Open door 124L (A1-F18AC-LMM-010).		
(5) Remove lockwire and disconnect 62P-S012A from J1 on left rear Radar Receiver R-2148A/ALR-67(V).		
(6) Apply electrical power (A1-F18AC-LMM-000).		
(7) On GND PWR control panel assembly, set 3 switch to B ON and hold for 3 seconds.		
(8) On control-indicator, press and release POWER ON switch.		
(9) Does 5vdc exist from 62P-S012A pin 14 (+) to pin 21 (-)? .....	m	j
j. Does 5vdc exist from 62P-S012A pin 16 (+) to pin 22 (-)? .....	m	k
k. Does 15vdc exist from 62P-S012A pin 1 (+) to pin 15 (-)? .....	m	l
l. Does -15vdc exist from 62P-S012A pin 2 (+) to pin 3 (-)? .....	m	o
m. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).		

**Table 1. Left Rear Radar Receiver Fails BIT (Continued)**

Procedure	No	Yes
<p>(4) Does continuity exist from:</p> <p>62P-S012A pin 14 to 62P-E009L pin 7</p> <p>62P-S012A pin 21 to 62P-E009L pin 23</p> <p>62P-S012A pin 16 to 62P-E009L pin 16</p> <p>62P-S012A pin 22 to 62P-E009L pin 30</p> <p>62P-S012A pin 1 to 62P-E009L pin 8</p> <p>62P-S012A pin 15 to 62P-E009L pin 24</p> <p>62P-S012A pin 2 to 62P-E009L pin 9</p> <p>62P-S012A pin 3 to 62P-E009L pin 15? .....</p>	f	n
n. Replace Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00). Do step q. ....	-	-
o. Do substeps below:		
<p>(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.</p> <p>(2) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(3) Open door 13L (A1-F18AC-LMM-010).</p> <p>(4) Disconnect 62P-E006A from J1 on Countermeasures Computer CP-1293( )/ALR-67(V).</p> <p>(5) Does continuity exist from:</p> <p>62P-S012A pin 19 to 62P-E006A pin 77</p> <p>62P-S012A pin 10 to 62P-E006A pin 3</p> <p>62P-S012A pin 18 to 62P-E006A pin 16</p> <p>62P-S012A pin 7 to 62P-E006A pin 79</p> <p>62P-S012A pin 9 to 62P-E006A pin 74</p> <p>62P-S012A pin 8 to 62P-E006A pin 73</p> <p>62P-S012A pin 17 to 62P-E006A pin 42</p> <p>62P-S012A pin 6 to 62P-E006A pin 41? .....</p>	f	p
p. Do Left Rear Local Oscillator Line Insertion Loss Test (WP039 03). If test good, malfunction has been isolated to Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300 WP054 00) or left rear Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP050 00). Do step q. ....	-	-
q. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
<p>(1) 62P-S012A (safety with lockwire)</p> <p>(2) 62P-E006A</p> <p>(3) Door 124L</p> <p>(4) Door 13L</p> <p>(5) Radar Receiver R-2055A/ALR-67(V) .....</p>	-	-



**Table 2. Right Forward Radar Receiver Fails BIT**

<b>Support Equipment Required</b>		
<b>NOTE</b>		
Alternate item type designations or part numbers are listed in parentheses.		
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>	
260-6XLP (AN/USM-311)	Multimeter	
<b>Materials Required</b>		
None		
<b>NOTE</b>		
RF Detection and Conversion Schematic (A1-F18AC-760-500, WP012 00) and Power Interface Schematic (A1-F18AC-760-500, WP011 00) may be used with this procedure.		
For locator, see WP032 00.		
Malfunction is caused by one of the items below:		
Aircraft Wiring ALR-67 Coax Cable SW475 ALR-67 Coax Cable SW523 Countermeasures Computer CP-1293( )/ALR-67(V) Radar Receiver R-2055A/ALR-67(V) Right Forward Radar Receiver R-2148A/ALR-67(V)		
<b>Procedure</b>	<b>No</b>	<b>Yes</b>
		
To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.		
<b>NOTE</b>		
The question used in logic tree “Does continuity exist” means to test for the items listed below:		
<ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol>		
a. Did special BIT display indicate a 45° quad video and a 45° quad rf failure? .....	b	i

**Table 2. Right Forward Radar Receiver Fails BIT (Continued)**

Procedure	No	Yes
b. Did special BIT display indicate a 45° quad rf failure? .....	c	h
c. Did special BIT display indicate a PCU DMA failure? .....	e	d
d. Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00). Do step q. ....	-	-
e. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.		
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Remove right forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).		
(5) Open door 13L (A1-F18AC-LMM-010).		
(6) Disconnect 62P-E006A from J1 on Countermeasures Computer CP-1293( )/ALR-67(V).		
(7) Does continuity exist from 62P-E006A pin 30 to 62P-B010A pin 11? .....	f	g
f. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step q. ....	-	-
g. Malfunction has been isolated to Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00) or right forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00). Do step q. ....	-	-
h. Do Right Forward High Band IF Line Insertion Loss Test (WP039 04). If test good, malfunction has been isolated to Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00) or right forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00). Do step q. ....	-	-
i. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.		
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Remove right forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).		
(5) Apply electrical power (A1-F18AC-LMM-000).		
(6) On GND PWR control panel assembly, set 3 switch to B ON and hold for 3 seconds.		

Table 2. Right Forward Radar Receiver Fails BIT (Continued)

Procedure	No	Yes
(7) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(8) Does 5vdc exist from 62P-B010A pin 14 (+) to pin 21 (-)? .....	m	j
j. Does 5vdc exist from 62P-B010A pin 16 (+) to pin 22 (-)? .....	m	k
k. Does 15vdc exist from 62P-B010A pin 1 (+) to pin 15 (-)? .....	m	l
l. Does -15vdc exist from 62P-B010A pin 2 (+) to pin 3 (-)? .....	m	o
m. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).		
(4) Does continuity exist from:		
62P-B010A pin 14 to 62P-E009L pin 1		
62P-B010A pin 21 to 62P-E009L pin 19		
62P-B010A pin 16 to 62P-E009L pin 33		
62P-B010A pin 22 to 62P-E009L pin 37		
62P-B010A pin 1 to 62P-E009L pin 2		
62P-B010A pin 16 to 62P-E009L pin 20		
62P-B010A pin 2 to 62P-E009L pin 3		
62P-B010A pin 3 to 62P-E009L pin 32? .....	f	n
n. Replace Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00). Do step q. ....	-	-
o. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) Open door 13L (A1-F18AC-LMM-010).		
(4) Disconnect 62P-E006A from J1 on Countermeasures Computer CP-1293( )/ALR-67(V).		
(5) Does continuity exist from:		
62P-B010A pin 19 to 62P-E006A pin 68		
62P-B010A pin 10 to 62P-E006A pin 2		
62P-B010A pin 18 to 62P-E006A pin 16		
62P-B010A pin 7 to 62P-E006A pin 79		
62P-B010A pin 9 to 62P-E006A pin 74		
62P-B010A pin 8 to 62P-E006A pin 73		
62P-B010A pin 17 to 62P-E006A pin 42		
62P-B010A pin 6 to 62P-E006A pin 41? .....	f	p


**Table 2. Right Forward Radar Receiver Fails BIT (Continued)**

Procedure	No	Yes
p. Do right forward Local Oscillator Line Insertion Loss Test (WP039 05). If test good, malfunction has been isolated to Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300 WP054 00) or right forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00). Do step q. ....	-	-
q. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:		
(1) 62P-E006A		
(2) Door 13L		
(3) Right forward Radar Receiver R-2148A/ALR-67(V)		
(4) Radar Receiver R-2055A/ALR-67(V) .....	-	-

**Table 3. Left Forward Radar Receiver Fails BIT**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
RF Detection and Conversion Schematic (A1-F18AC-760-500, WP012 00) and Power Interface Schematic (A1-F18AC-760-500, WP011 00) may be used with this procedure.	
For locator, see WP032 00.	
Malfunction is caused by one of the items below:	
Aircraft Wiring	
ALR-67 Coax Cable SW476	
ALR-67 Coax Cable SW625	
Countermeasures Computer CP-1293( )/ALR-67(V)	
Left Forward Radar Receiver R-2148A/ALR-67(V)	
Radar Receiver R-2055A/ALR-67(V)	

**Table 3. Left Forward Radar Receiver Fails BIT (Continued)**

Procedure	No	Yes
<div style="text-align: center;">  <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol> </div>		
a. Did special BIT display indicate a 315° quad video and a 315° quad rf failure? .....	b	i
b. Did special BIT display indicate a 315° quad rf failure? .....	c	h
c. Did special BIT display indicate a PCU DMA failure? .....	e	d
d. Replace Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00). .....	-	-
e. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.		
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Remove left forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).		
(5) Open door 13L (A1-F18AC-LMM-010).		
(6) Disconnect 62P-E006A from J1 on Countermeasures Computer CP-1293( )/ALR-67(V).		
(7) Does continuity exist from 62P-E006A pin 50 to 62P-A013A pin 11? .....	f	g
f. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step q. ....	-	-
g. Malfunction has been isolated to Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00) or left forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00). Do step q. ....	-	-

**Table 3. Left Forward Radar Receiver Fails BIT (Continued)**

Procedure	No	Yes
h. Do Left Forward High Band IF Line Insertion Loss Test (WP039 04). If test good, malfunction has been isolated to Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00) or left forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00). Do step q. ....	-	-
i. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.		
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Remove left forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).		
(5) Apply electrical power (A1-F18AC-LMM-000).		
(6) On GND PWR control panel assembly, set 3 switch to B ON and hold for 3 seconds.		
(7) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(8) Does 5vdc exist from 62P-A013A pin 14 (+) to pin 21 (-)? .....	m	j
j. Does 5vdc exist from 62P-A013A pin 16 (+) to pin 22 (-)? .....	m	k
k. Does 15vdc exist from 62P-A013A pin 1 (+) to pin 15 (-)? .....	m	l
l. Does -15vdc exist from 62P-A013A pin 2 (+) to pin 3 (-)? .....	m	o
m. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).		
(4) Does continuity exist from:		
62P-A013A pin 14 to 62P-E009L pin 10		
62P-A013A pin 21 to 62P-E009L pin 25		
62P-A013A pin 16 to 62P-E009L pin 18		
62P-A013A pin 22 to 62P-E009L pin 31		
62P-A013A pin 1 to 62P-E009L pin 11		
62P-A013A pin 15 to 62P-E009L pin 26		
62P-A013A pin 2 to 62P-E009L pin 12		
62P-A013A pin 3 to 62P-E009L pin 17? .....	f	n
n. Replace Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00). Do step q. ....	-	-

**Table 3. Left Forward Radar Receiver Fails BIT (Continued)**

Procedure	No	Yes
<p>o. Do substeps below:</p> <p>(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.</p> <p>(2) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(3) Open door 13L (A1-F18AC-LMM-010).</p> <p>(4) Disconnect 62P-E006A from J1 on Countermeasures Computer CP-1293( )/ALR-67(V).</p> <p>(5) Does continuity exist from:</p> <p>62P-A013A pin 19 to 62P-E006A pin 77</p> <p>62P-A013A pin 10 to 62P-E006A pin 3</p> <p>62P-A013A pin 18 to 62P-E006A pin 16</p> <p>62P-A013A pin 7 to 62P-E006A pin 79</p> <p>62P-A013A pin 9 to 62P-E006A pin 74</p> <p>62P-A013A pin 8 to 62P-E006A pin 73</p> <p>62P-A013A pin 17 to 62P-E006A pin 42</p> <p>62P-A013A pin 6 to 62P-E006A pin 41? .....</p>	f	p
<p>p. Do Left Forward Local Oscillator Line Insertion Loss Test (WP039 05). If test is good, malfunction has been isolated to Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00) or left forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00). Do step q .....</p>	-	-
<p>q. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:</p> <p>(1) 62P-E006A</p> <p>(2) Door 13L</p> <p>(3) Left forward Radar Receiver R-2148A/ALR-67(V)</p> <p>(4) Radar Receiver R-2055A/ALR-67(V) .....</p>	-	-

**THIS PAGE INTENTIONALLY LEFT BLANK.**



---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TROUBLESHOOTING - BUILT-IN TEST PART 6**  
**COUNTERMEASURES WARNING AND CONTROL SYSTEM**  
**EFFECTIVITY: 161702 AND UP**

---

**Reference Material**

Line Maintenance Procedures ..... A1-F18AC-LMM-000  
Line Maintenance Access Doors ..... A1-F18AC-LMM-010

**Alphabetical Index**

Subject	Page No.
Table 1. Control-Indicator Fails BIT .....	1
Table 2. Special Receiver Fails BIT .....	3
Table 3. Integrated Antenna Fails BIT .....	7

**Record of Applicable Technical Directives**

None

**Table 1. Control-Indicator Fails BIT**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
Part Number or Type Designation	Nomenclature
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
Power Interface Schematic (A1-F18AC-760-500, WP011 00) and Controls Displays and Audio Schematic (A1-F18AC-760-500, WP015 00) may be used with this procedure.	
For locator, see WP032 00.	

Table 1. Control-Indicator Fails BIT (Continued)

Malfunction is caused by one of the items below:  Aircraft Wiring Control-Indicator C-10250/ALR-67(V) Countermeasures Computer CP-1293( )/ALR-67(V)		
Procedure	No	Yes
<div>CAUTION</div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>1. Pin to pin test per procedural step.</li><li>2. Shorts to ground.</li><li>3. Shorts between surrounding pins on connectors.</li><li>4. Shorts between shield and conductors.</li><li>5. Shield continuity.</li></ol>		
a. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.		
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Open door 13L (A1-F18AC-LMM-010).		
(5) Disconnect 62P-E006A from J1 on Countermeasures Computer CP-1293( )/ALR-67(V).		
(6) In cockpit, remove RH inboard kickshield panel assembly, door CPK (A1-F18AC-LMM-010).		
(7) Disconnect 62J-J007 from P1 on control-indicator.		
(8) Does continuity exist from:		
62P-E006A pin 38 to 62J-J007 pin 13		
62P-E006A pin 37 to 62J-J007 pin 27? .....	b	c
b. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step e. ....	-	-

**Table 1. Control-Indicator Fails BIT (Continued)**

Procedure	No	Yes
c. Does continuity exist from: 62P-E006A pin 61 to 62J-J007 pin 18 62P-E006A pin 17 to 62J-J007 pin 30 62P-E006A pin 56 to 62J-J007 pin 17 62P-E006A pin 9 to 62J-J007 pin 16? .....	b	c
d. Malfunction has been isolated to Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00) or Control-Indicator C-10250/ALR-67(V) (A1-F18AC-760-300, WP056 00). Do step e. ....	-	-
e. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed: (1) 62J-J007 (2) 62P-E006A (3) RH inboard kickshield panel assembly, door CPK (4) Door 13L .....	-	-

**Table 2. Special Receiver Fails BIT**

Support Equipment Required	
<b>NOTE</b>	
Alternate item type designations or part numbers are listed in parentheses.	
<b>Part Number or Type Designation</b>	<b>Nomenclature</b>
260-6XLP (AN/USM-311)	Multimeter
<b>Materials Required</b>	
None	
<b>NOTE</b>	
Power Interface Schematic (A1-F18AC-760-500, WP011 00) and RF Detection and Conversion Schematic (A1-F18AC-760-500, WP012 00) may be used with this procedure.	
For locator, see WP032 00.	

Table 2. Special Receiver Fails BIT (Continued)

Malfunction is caused by one of the items below:  Aircraft Wiring Control-Indicator C-10250/ALR-67(V) Countermeasures Computer CP-1293( )/ALR-67(V) No. 7 Circuit Breaker/Relay Panel Assembly Radar Receiver R-2055A/ALR-67(V)		
Procedure	No	Yes
<div>CAUTION</div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p>NOTE</p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"><li>Pin to pin test per procedural step.</li><li>Shorts to ground.</li><li>Shorts between surrounding pins on connectors.</li><li>Shorts between shield and conductors.</li><li>Shield continuity.</li></ol>		
a. Do substeps below:  (1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.  (2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.  (3) Remove electrical power (A1-F18AC-LMM-000).  (4) Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).  (5) Apply electrical power (A1-F18AC-LMM-000).  (6) Does 115vac exist from:  62P-E009K pin A to pin F 62P-E009K pin B to pin F 62P-E009K pin C to pin F? .....	b	f
b. Do substeps below:  (1) Remove electrical power (A1-F18AC-LMM-000).  (2) Does continuity exist from 62P-E009K pin F to aircraft ground? .....	c	d
c. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step 1. ....	-	-


Table 2. Special Receiver Fails BIT (Continued)

Procedure	No	Yes
d. Do substeps below:		
(1) Open door 10L (A1-F18AC-LMM-010).		
(2) Disconnect 52P-C057D from no. 7 circuit breaker/relay panel assembly.		
(3) Does continuity exist from:		
52P-C057D pin 91 to 62P-E009K pin A		
52P-C057D pin 102 to 62P-E009K pin B		
52P-C057D pin 112 to 62P-E009K pin C? .....	c	e
e. Isolate between no. 7 circuit breaker/relay panel assembly wiring and 62CBC002, 62CBC003 and 62CBC004 (A1-F18AC-420-300, WP032 00). Do step l. ....	-	-
f. Do substeps below:		
(1) On GND PWR control panel assembly, set 3 switch to B ON and hold for 3 seconds.		
(2) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(3) Does 28vdc exist from 62P-E009M pin 36 (+) to pin 37 (-)? .....	g	j
g. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) In cockpit, remove RH inboard kickshield panel assembly, door CPK (A1-F18AC-LMM-010).		
(4) Disconnect P1 from 61J-J007.		
(5) Does continuity exist from:		
62P-E009M pin 36 to 62J-J007 pin 34		
62P-E009M pin 37 to 62J-J007 pin 33? .....	c	h
h. Does continuity exist from 62J-J007 pin 21 to aircraft ground? .....	c	i
i. Replace Control-Indicator C-10250/ALR-67(V) (A1-F18AC-760-300, WP056 00). Do step l. ....	-	-
j. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) Open door 13L (A1-F18AC-LMM-010).		

**Table 2. Special Receiver Fails BIT (Continued)**

Procedure	No	Yes
<p>(4) Disconnect 62P-E006A from J1 on Countermeasures Computer CP-1293( )/ALR-67(V).</p> <p>(5) Does continuity exist from:</p> <p>62P-E009M pin 1 to 62P-E006A pin 21</p> <p>62P-E009M pin 19 to 62P-E006A pin 45</p> <p>62P-E009M pin 2 to 62P-E006A pin 44</p> <p>62P-E009M pin 20 to 62P-E006A pin 62</p> <p>62P-E009M pin 4 to 62P-E006A pin 75</p> <p>62P-E009M pin 21 to 62P-E006A pin 19</p> <p>62P-E009M pin 5 to 62P-E006A pin 63</p> <p>62P-E009M pin 22 to 62P-E006A pin 20</p> <p>62P-E009M pin 7 to 62P-E006A pin 22</p> <p>62P-E009M pin 23 to 62P-E006A pin 64</p> <p>62P-E009M pin 8 to 62P-E006A pin 43</p> <p>62P-E009M pin 24 to 62P-E006A pin 18</p> <p>62P-E009M pin 10 to 62P-E006A pin 61</p> <p>62P-E009M pin 25 to 62P-E006A pin 17? .....</p>	c	k
<p>k. Malfunction has been isolated to Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00) or Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP056 00). Do step l. ....</p>	-	-
<p>l. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:</p> <p>(1) 52P-C057D</p> <p>(2) 62J-J007</p> <p>(3) 62P-E006A</p> <p>(4) Radar Receiver R-2055A/ALR-67(V)</p> <p>(5) Door 10L</p> <p>(6) Door 13L</p> <p>(7) RH inboard kickpanel assembly, door CPK .....</p>	-	-

**Table 3. Integrated Antenna Fails BIT**

Support Equipment Required					
<p><b>NOTE</b></p> <p>Alternate item type designations or part numbers are listed in parentheses.</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <p><b>Part Number or Type Designation</b></p> <p>260-6XLP (AN/USM-311)</p> </td> <td style="width: 50%; vertical-align: top;"> <p><b>Nomenclature</b></p> <p>Multimeter</p> </td> </tr> </table> <p style="text-align: center; margin-top: 10px;"><b>Materials Required</b></p> <p style="text-align: center;">None</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Power Interface Schematic (A1-F18AC-760-500, WP011 00) and RF Detection and Conversion Schematic (A1-F18AC-760-500, WP012 00) may be used with this procedure.</p> <p>For locator, see WP032 00.</p> <p>Malfunction is caused by one of the items below:</p> <ul style="list-style-type: none"> <li>Aircraft Wiring</li> <li>ALR-67 Coax Cable SW526A</li> <li>ALR-67 Coax Cable SW526B</li> <li>ALR-67 Coax Cable SW527A</li> <li>ALR-67 Coax Cable SW527B</li> <li>Countermeasures Computer CP-1293( )/ALR-67(V)</li> <li>Integrated Antenna AS-3190A/ALR-67(V)</li> <li>Radar Receiver R-2055A/ALR-67(V)</li> </ul>			<p><b>Part Number or Type Designation</b></p> <p>260-6XLP (AN/USM-311)</p>	<p><b>Nomenclature</b></p> <p>Multimeter</p>	
<p><b>Part Number or Type Designation</b></p> <p>260-6XLP (AN/USM-311)</p>	<p><b>Nomenclature</b></p> <p>Multimeter</p>				
<b>Procedure</b>	<b>No</b>	<b>Yes</b>			
<div style="text-align: center; margin-bottom: 10px;">  </div> <p>To prevent damage to low level devices (switches/relay contacts), do not test for continuity with multimeter on the RX1 scale. Pin to pin tests that do not go through switches/relay contacts may use the RX1 scale.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The question used in logic tree “Does continuity exist” means to test for the items listed below:</p> <ol style="list-style-type: none"> <li>1. Pin to pin test per procedural step.</li> <li>2. Shorts to ground.</li> <li>3. Shorts between surrounding pins on connectors.</li> <li>4. Shorts between shield and conductors.</li> <li>5. Shield continuity.</li> </ol> <table style="width: 100%; border: none; margin-top: 20px;"> <tr> <td style="width: 70%; border-bottom: 1px solid black; vertical-align: bottom;">           a. Did special BIT display indicate a low band BIT failure (Word 2, bit 13)? .....         </td> <td style="width: 5%; border-bottom: 1px solid black; vertical-align: bottom; text-align: center;">b</td> <td style="width: 25%; border-bottom: 1px solid black; vertical-align: bottom; text-align: center;">n</td> </tr> </table>			a. Did special BIT display indicate a low band BIT failure (Word 2, bit 13)? .....	b	n
a. Did special BIT display indicate a low band BIT failure (Word 2, bit 13)? .....	b	n			

**Table 3. Integrated Antenna Fails BIT (Continued)**

Procedure	No	Yes
b. Did special BIT display indicate a low band video 135° and low band video 225° failure (Word 3, bits 9 and 10)? .....	c	m
c. Did special BIT display indicate a low band video 45° and low band video 315° failure (Word 3, bits 8 and 11)? .....	d	k
d. Did special BIT display indicate a low band video 45° failure? .....	e	j
e. Did special BIT display a low band video 135° failure? .....	f	j
f. Did special BIT display indicate a low band video 225° failure? .....	g	j
g. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.		
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Open door 3 (A1-F18AC-LMM-010).		
(5) Disconnect 62P-B014A from J1 on Integrated Antenna AS-3190A/ALR-67(V).		
(6) Open door 13L (A1-F18AC-LMM-010).		
(7) Disconnect 62P-E006A from J1 on Countermeasures Computer CP-1293( )/ALR-67(V).		
(8) Does continuity exist from 62P-B014A pin 1 to 62P-E006A pin 31? .....	h	j
h. Isolate defective aircraft wiring (A1-F18A( )-WDM-000). Do step u .....	-	-
i. Malfunction has been isolated to Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00) or Integrated Antenna AS-3190A/ALR-67(V) (A1-F18AC-760-300, WP048 00). Do step u. ....	-	-
j. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.		
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Open door 3 (A1-F18AC-LMM-010).		
(5) Disconnect 62P-B014A from J1 on Integrated Antenna AS-3190A/ALR-67(V).		
(6) Open door 13L (A1-F18AC-LMM-010).		



**Table 3. Integrated Antenna Fails BIT (Continued)**

Procedure	No	Yes
<p>(7) Disconnect 62P-E006A from J1 on Countermeasures Computer CP-1293( )/ALR-67(V).</p> <p>(8) Does continuity exist from:</p> <p>For 45° - 62P-B014A pin 2 to 62P-E006A pin 28</p> <p>For 135° - 62P-B014A pin 4 to 62P-E006A pin 25</p> <p>For 225° - 62P-B014A pin 5 to 62P-E006A pin 24? .....</p>	h	i
<p>k. Do substeps below:</p> <p>(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.</p> <p>(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.</p> <p>(3) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(4) Open door 3 (A1-F18AC-LMM-010).</p> <p>(5) Disconnect 62P-B014A from J1 on Integrated Antenna AS-3190A/ALR-67(V).</p> <p>(6) Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).</p> <p>(7) Does continuity exist from:</p> <p>62P-B014A pin 14 to 62P-E009M pin 14</p> <p>62P-B014A pin 28 to 62P-E009M pin 28? .....</p>	h	l
<p>l. Malfunction has been isolated to Integrated Antenna AS-3190A/ALR-67(V) (A1-F18AC-760-300, WP048 00) or Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00). Do step u. ....</p>	-	-
<p>m. Do substeps below:</p> <p>(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.</p> <p>(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.</p> <p>(3) Remove electrical power (A1-F18AC-LMM-000).</p> <p>(4) Open door 3 (A1-F18AC-LMM-010).</p> <p>(5) Disconnect 62P-B014A from J1 on Integrated Antenna AS-3190A/ALR-67(V).</p> <p>(6) Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).</p> <p>(7) Does continuity exist from:</p> <p>62P-B014A pin 13 to 62P-E009M pin 13</p> <p>62P-B014A pin 27 to 62P-E009M pin 27? .....</p>	h	l

**Table 3. Integrated Antenna Fails BIT (Continued)**

Procedure	No	Yes
n. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) If Receiver-Transmitter RT-1079B/ALQ-126 is installed, on ECM control panel assembly, set ECM mode switch to OFF.		
(3) Remove electrical power (A1-F18AC-LMM-000).		
(4) Open door 3 (A1-F18AC-LMM-010).		
(5) Disconnect 62P-B014A from J1 on Integrated Antenna AS-3190A/ALR-67(V).		
(6) Apply electrical power (A1-F18AC-LMM-000).		
(7) On GND PWR control panel assembly, set 3 switch to B ON and hold for 3 seconds.		
(8) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(9) Does 5vdc exist from 62P-B014A pin 15 (+) to pin 16 (-)? .....	q	o
o. Does 15vdc exist from 62P-B014A pin 17 (+) to pin 26 (-)? .....	q	p
p. Does -15vdc exist from 62P-B014A pin 18 (+) to pin 30 (-)? .....	q	s
q. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).		
(4) Does continuity exist from:		
62P-B014A pin 15 to 62P-E009M pin 15		
62P-B014A pin 16 to 62P-E009M pin 16		
62P-B014A pin 17 to 62P-E009M pin 17		
62P-B014A pin 26 to 62P-E009M pin 26		
62P-B014A pin 18 to 62P-E009M pin 18		
62P-B014A pin 30 to 62P-E009M pin 30? .....	h	r
r. Replace Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00). Do step u. ....	-	-
s. Do substeps below:		
(1) On Control-Indicator C-10250/ALR-67(V), press and release POWER ON switch.		
(2) Remove electrical power (A1-F18AC-LMM-000).		
(3) Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).		

**Table 3. Integrated Antenna Fails BIT (Continued)**

Procedure	No	Yes
(4) Open door 13L (A1-F18AC-LMM-010).  (5) Disconnect 62P-E006A from J1 on Countermeasures Computer CP-1293( )/ALR-67(V).  (6) Does continuity exist from:  62P-E006A pin 61 to 62P-E009M pin 10 62P-E006A pin 17 to 62P-E009M pin 25 .....	h	t
t. Do Low Band BIT RF Line Insertion Loss Test (WP039 07). If test good, malfunction has been isolated to Countermeasures Computer CP-1293( )/ALR-67(V) (A1-F18AC-760-300, WP055 00) or Integrated Antenna AS-3190A/ALR-67(V) (A1-F18AC-760-300, WP048 00) or Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00). Do step u. ....	-	-
u. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed, or closed:  (1) 62P-B014A  (2) 62P-E006A  (3) Door 3  (4) Door 13L  (5) Radar Receiver R-2055A/ALR-67(V) .....	-	-

**THIS PAGE INTENTIONALLY LEFT BLANK.**

---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TESTING - LINE/ANTENNA RETURN LOSS AND INSERTION LOSS**  
**COUNTERMEASURES WARNING AND CONTROL SYSTEM**  
**EFFECTIVITY: 161702 AND UP**

---

## Reference Material

None

## Alphabetical Index

<b>Subject</b>	<b>Page No.</b>
Introduction .....	1
Table 1. Schedule Maintenance Line/Antenna Return Loss and Insertion Loss .....	2

## Record of Applicable Technical Directives

None

### 1. INTRODUCTION.

2. This work package identifies the work packages necessary to do scheduled maintenance line/antenna

return loss and insertion loss. Using the AN/USM-402(V)1 Swept Frequency Measurement Test Set, do all tests in table 1 in the order listed.

**Table 1. Schedule Maintenance Line/Antenna Return Loss and Insertion Loss**

Work Package Number	Table Number	Test
039 01	1	Right Rear High Band RF Line/Antenna Insertion Loss and Return Loss
	2	Left Rear High Band RF Line/Antenna Insertion Loss and Return Loss
039 02	1	Right and Left Rear Local Oscillator Line Insertion Loss
039 03	1	Right Rear High Band IF Line Insertion Loss
	2	Left Rear High Band IF Line Insertion Loss
039 04	1	Right Forward High Band IF Line Insertion Loss
	2	Left Forward High Band IF Line Insertion Loss
039 05	1	Right and Left Forward Local Oscillator Line Insertion Loss
039 06	1	Right Forward High Band RF Line/Antenna Insertion Loss and Return Loss
	2	Left Forward High Band RF Line/Antenna Insertion Loss and Return Loss
039 07	1	Low Band BIT RF Line Insertion Loss
	2	Low Band OMNI RF Line Insertion Loss

**ORGANIZATIONAL MAINTENANCE****TESTING AND TROUBLESHOOTING****TESTING - REAR HIGH BAND RF LINE/ANTENNA INSERTION LOSS AND RETURN LOSS****COUNTERMEASURES WARNING AND CONTROL SYSTEM****EFFECTIVITY: 161702 AND UP**

**This WP is incomplete without WP020 00 contained in Confidential Supplement A1-F18AC-760-210/(C).**

**Reference Material**

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Tactical Electronic Warfare Systems .....	A1-F18AC-760-200
Line/Antenna Return Loss and Insertion Loss .....	WP020 00
Tactical Electronic Warfare Systems .....	A1-F18AC-760-210/(C)
Line/Antenna Return Loss and Insertion Loss .....	WP020 00
Tactical Electronic Warfare Systems .....	A1-F18AC-760-300
Right Rear Antenna - Radome AS-3306/ALR-67(V) .....	WP049 00
Left Rear Antenna - Radome AS-3306/ALR-67(V) .....	WP049 00

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Rear High Band RF Circuits, Figure 1 .....	17
Table 1. Right Rear High Band RF Line/Antenna Insertion Loss and Return Loss .....	1
Table 2. Left Rear High Band RF Line/Antenna Insertion Loss and Return Loss .....	6
Table 3. Right Rear High Band RF Circuit Out of Tolerance .....	11
Table 4. Left Rear High Band RF Circuit Out of Tolerance .....	14

**Record of Applicable Technical Directives**

None

**Table 1. Right Rear High Band RF Line/Antenna Insertion Loss and Return Loss**

<b>Procedure</b>	<b>Normal Indication</b>	<b>Remedy for Abnormal Indication</b>
<b>System Required Components</b> Right Rear High Band Antenna Circuit installed.		
<b>Support Equipment Required</b> None		
<b>Materials Required</b>		
<b>Specification or Part Number</b> MS20995NC20		<b>Nomenclature</b> Lockwire

**Table 1. Right Rear High Band RF Line/Antenna Insertion Loss and Return Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>NOTE</b></p> <p align="center">For locator, refer to WP032 00.</p>		
<p>1. PRELIMINARY.</p> <p>a. Make sure electrical power is off (A1-F18AC-LMM-000).</p> <p>b. Remove right rear Antenna-Radome AS-3306/ALR-67(V) (A1-F18AC-760-300, WP049 00).</p> <p>c. Connect 62P-T035B to adapter 62CPT035B.</p> <p>d. Remove lockwire and disconnect 62P-T011D from J4 on right rear Radar Receiver R-2148A/ALR-67(V).</p>		
<p align="center"><b>NOTE</b></p> <p align="center">Sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00). Use frequency range F2.</p>		
<p>e. Do Initial Setup (WP020 00).</p> <p>2. INSERTION LOSS TEST.</p> <p>a. Do Insertion Loss Setup (WP020 00). Use 7mm to TNC female adapter on directional coupler (channel R) and 7mm to TNC male adapter on directional coupler (channel B).</p>		
<p align="center"><b>NOTE</b></p> <p align="center">Multiple reference line recordings are required for frequency range F2.</p>		
<p>b. Do Recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches to:</p> <p>On 161702 THRU 162414</p> <p>(1) 4.7</p> <p>(2) 5.2</p> <p>On 162415 AND UP</p> <p>(1) 5.0</p> <p>(2) 5.5</p>		



**Table 1. Right Rear High Band RF Line/Antenna Insertion Loss and Return Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>c. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.</p> <p>d. Connect 62P-T017 to directional coupler (channel R) and 62P-T011D to directional coupler (channel B).</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p>Note frequency where insertion loss limit is exceeded. This frequency is <math>F_0</math>, used in fault location.</p>		
e. Do Measurement Recording (WP020 00).	<p>Insertion loss measurement is not greater than:</p> <p>On 161702 THRU 162414, 4.7 dB the first 50% of frequency range F2 and 5.2 dB for the remaining 50%.</p> <p>On 162415 AND UP, 5.0 dB the first 50% of frequency range F2 and 5.5 dB for the remaining 50%.</p>	<p>Do table 3.</p> <p>Do table 3.</p>
<p style="text-align: center;"><b>NOTE</b></p> <p>The frequency range of interest for the unit under test requires more than one frequency selection on the controller and sweep oscillator. This procedure will be done for each frequency selection. Use frequency range F3.</p>		
<p>f. Disconnect directional coupler (channel R) and directional coupler (channel B) from unit under test.</p> <p>g. Replace 7mm to TNC female adapter on directional coupler (channel B) with 7mm to TNC male adapter.</p> <p>h. Connect 7mm to TNC female adapter on directional coupler (channel R) to 7mm to TNC male adapter on directional coupler (channel B).</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p>Multiple reference line recordings are required for frequency range F3.</p>		
<p>i. Do Recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches to:</p> <p>On 161702 THRU 162414</p> <p>(1) 6.4</p> <p>(2) 7.5</p>		

**Table 1. Right Rear High Band RF Line/Antenna Insertion Loss and Return Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>On 162415 AND UP</p> <p>(1) 6.8</p> <p>(2) 8.4</p> <p>j. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.</p> <p>k. Connect 62P-T017 to directional coupler (channel R) and 62P-T011D to directional coupler (channel B).</p>		
<p><b>NOTE</b></p> <p>Right rear Band Pass Filter F-1539/ALR-67(V) will cause a notch in insertion loss measurement which exceeds the maximum allowable insertion loss limit.</p> <p>The attenuated frequency range (FR-1) is listed in Band Suppression Frequency Range, table 3 (A1-F18AC-760-210/C, WP020 00).</p> <p>Note frequency where insertion loss limit is exceeded (ignoring band pass filter notch). This frequency is <math>F_0</math>, and is used in fault location.</p>		
<p>l. Do Measurement Recording (WP020 00).</p>	<p>1. Insertion loss measurement is not greater than:</p> <p>On 161702 THRU 162414, 6.4 dB the first 50% of frequency range F3 and 7.5 dB for the remaining 50%.</p> <p>On 162415 AND UP, 6.8 dB the first 50% of frequency range F3 and 8.4 dB for the remaining 50%.</p> <p>2. The attenuated frequency range is equal to FR-1.</p>	<p>Do table 3.</p> <p>Do table 3.</p> <p>Replace right rear Band Pass Filter F-1539/ALR-67(V) (A1-F18AC-760-300, WP052 00).</p>
<p>m. Apply electrical power (A1-F18AC-LMM-000).</p> <p>n. On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.</p>		

**Table 1. Right Rear High Band RF Line/Antenna Insertion Loss and Return Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>NOTE</b></p> <p>With exception of notch caused by Right Rear Band Pass Filter F-1539/ALR-67(V), measurement recording may be superimposed on previous measurement recording.</p>		
<p>o. Do Measurement Recording (WP020 00).</p>	<p>Insertion loss measurement is not greater than:</p> <p>On 161702 THRU 162414, 6.4 dB the first 50% of frequency range F3 and 7.5 dB for the remaining 50%.</p> <p>On 162415 AND UP, 6.8 dB the first 50% of frequency range F3 and 8.4 dB for the remaining 50%.</p>	<p>Replace right rear Radio Frequency Transmission Switch SA-2362/ALR-67(V) (A1-F18AC-760-300, WP051 00).</p> <p>Replace right rear Radio Frequency Transmission Switch SA-2362/ALR-67(V) (A1-F18AC-760-300, WP051 00).</p>
<p>p. Remove electrical power (A1-F18AC-LMM-000).</p>		
<p>3. RETURN LOSS TEST.</p>		
<p align="center"><b>NOTE</b></p> <p>Sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00). Use frequency range F6.</p>		
<p>a. Do Return Loss Setup (WP020 00).</p>		
<p>b. Do Recorder Reference Line Recording (WP020 00) for return loss. Set OFFSET dB thumbwheel switches to 9.6.</p>		
<p>c. Remove short circuit termination from directional coupler (channel A).</p>		
<p>d. Connect right rear Antenna-Radome AS-3306/ALR to directional coupler (channel A), using 7mm to TNC male adapter.</p>		
<p align="center"><b>NOTE</b></p> <p>When doing measurement recording, make sure antenna is more than 5 feet from any metal object.</p>		
<p>e. Do Measurement Recording (WP020 00).</p>	<p>Return loss measurement is not less than 9.6 dB for frequency range F6.</p>	<p>Replace right rear Antenna-Radome AS-3306/ALR (A1-F18AC-760-300, WP049 00).</p>

**Table 1. Right Rear High Band RF Line/Antenna Insertion Loss and Return Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>4. FINAL.</p> <p>a. If this is last test, do Shutdown (WP020 00).</p> <p>b. Connect 62P-T011D to J4 on right rear Radar Receiver R-2148A/ALR- 67(V).</p> <p>c. Install right rear Antenna-Radome AS-3306/ALR (A1-F18AC-760-300, WP049 00).</p>		

**Table 2. Left Rear High Band RF Line/Antenna Insertion Loss and Return Loss**

Procedure	Normal Indication	Remedy for Abnormal Indication
<b>System Required Components</b>		
Left Rear High Band Antenna Circuit installed.		
<b>Support Equipment Required</b>		
None		
<b>Materials Required</b>		
<b>Specification or Part Number</b>		<b>Nomenclature</b>
MS20995NC20		Lockwire
<b>NOTE</b>		
For locator, refer to WP032 00.		
1. PRELIMINARY.  a. Make sure electrical power is off (A1-F18AC-LMM-000).  b. Remove left rear Antenna-Radome AS-3306/ALR (A1-F18AC-760-300, WP049 00).  c. Connect 62P-S036B to adapter 62CPS036B.		

**Table 2. Left Rear High Band RF Line/Antenna Insertion Loss and Return Loss  
(Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
d. Remove lockwire and disconnect 62P-S012D from J4 on left rear Radar Receiver R-2148A/ALR-67(V).		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00). Use frequency range F2.</p>		
e. Do Initial Setup (WP020 00).		
2. INSERTION LOSS TEST.		
a. Do Insertion Loss Setup (WP020 00). Use 7mm to TNC female adapter on directional coupler (channel R) and 7mm to TNC male adapter on directional coupler (channel B).		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Multiple reference line recordings are required for frequency range F2.</p>		
b. Do Recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches to:		
<p style="margin-left: 40px;">On 161702 THRU 162414</p> <p style="margin-left: 80px;">(1) 4.7</p> <p style="margin-left: 80px;">(2) 5.2</p> <p style="margin-left: 40px;">On 162415 AND UP</p> <p style="margin-left: 80px;">(1) 5.0</p> <p style="margin-left: 80px;">(2) 5.5</p>		
c. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.		
d. Connect 62P-S018 to directional coupler (channel R) and 62P-S012D to directional coupler (channel B).		

**Table 2. Left Rear High Band RF Line/Antenna Insertion Loss and Return Loss  
(Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>NOTE</b></p> <p>Note frequency where insertion loss limit is exceeded. This frequency is <math>F_0</math>, used in fault location.</p>		
e. Do Measurement Recording (WP020 00).	<p>Insertion loss measurement is not greater than:</p> <p>On 161702 THRU 162414, 4.7 dB the first 50% of frequency range F2 and 5.2 dB for the remaining 50%.</p> <p>On 162415 AND UP, 5.0 dB the first 50% of frequency range F2 and 5.5 dB for the remaining 50%.</p>	<p>Do table 4.</p> <p>Do table 4.</p>
<p align="center"><b>NOTE</b></p> <p>The frequency range of interest for the unit under test requires more than one frequency selection on the controller and sweep oscillator. This procedure will be done for each frequency selection. Use frequency range F3.</p>		
f. Disconnect directional coupler (channel R) and directional coupler (channel B) from unit under test.		
g. Replace 7mm to TNC female adapter on directional coupler (channel B) with 7mm to TNC male adapter.		
h. Connect 7mm to TNC female adapter on directional coupler (channel R) to 7mm to TNC male adapter on directional coupler (channel B).		
<p align="center"><b>NOTE</b></p> <p>Multiple reference line recordings are required for frequency range F3.</p>		
i. Do Recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches to:		
<p>On 161702 THRU 162414</p> <p>(1) 6.4</p> <p>(2) 7.5</p> <p>On 162415 AND UP</p> <p>(1) 6.8</p> <p>(2) 8.4</p>		

**Table 2. Left Rear High Band RF Line/Antenna Insertion Loss and Return Loss  
(Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>j. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.</p> <p>k. Connect 62P-S018 to directional coupler (channel R) and 62P-S012D to directional coupler (channel B).</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p>Left rear Band Pass Filter F-1539/ALR-67(V) will cause a notch in insertion loss measurement which exceeds the maximum allowable insertion loss limit.</p> <p>The attenuated frequency range (FR-1) is listed in Band Suppression Frequency Range, table 3 (A1-F18AC-760-210/(C)).</p> <p>Note frequency where insertion loss limit is exceeded (ignoring band pass filter notch). This frequency is <math>F_o</math>, used in fault location.</p>		
<p>l. Do Measurement Recording (WP020 00).</p>	<p>1. Insertion loss measurement is not greater than:</p> <p>On 161702 THRU 162414, 6.4 dB the first 50% of frequency range F3 and 7.5 dB for the remaining 50%.</p> <p>On 162415 AND UP, 6.8 dB the first 50% of frequency range F3 and 8.4 dB for the remaining 50%.</p> <p>2. The attenuated frequency range is equal to FR-1.</p>	<p>Do table 4.</p> <p>Do table 4.</p> <p>Replace left rear Band Pass Filter F-1539/ALR-67(V) (A1-F18AC-760-300, WP052 00).</p>
<p>m. Apply electrical power (A1-F18AC-LMM-000).</p> <p>n. On GND PWR control panel assembly, set and hold 3 switch to A ON for three seconds.</p>		

**Table 2. Left Rear High Band RF Line/Antenna Insertion Loss and Return Loss  
(Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>NOTE</b></p> <p>With exception of notch caused by Left Rear Band Pass Filter F-1539/ALR-67(V), measurement recording may be superimposed on previous measurement recording.</p>		
<p>o. Do Measurement Recording (WP020 00).</p>	<p>Insertion loss measurement is not greater than:</p> <p>On 161702 THRU 162414, 6.4 dB the first 50% of frequency range F3 and 7.5 dB for the remaining 50%.</p> <p>On 162415 AND UP, 6.8 dB the first 50% of frequency range F3 and 8.4 dB for the remaining 50%.</p>	<p>Replace left rear Radio Frequency Transmission Switch SA-2362/ALR-67(V) (A1-F18AC-760-300, WP051 00).</p> <p>Replace left rear Radio Frequency Transmissions Switch SA-2362/ALR-67(V) (A1-F18AC-760-300, WP051 00).</p>
<p>p. Remove electrical power (A1-F18AC-LMM-000).</p>		
<p>3. RETURN LOSS TEST.</p>		
<p align="center"><b>NOTE</b></p> <p>Sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00). Use frequency range F6.</p>		
<p>a. Do Return Loss Setup (WP020 00).</p>		
<p>b. Do Recorder Reference Line Recording (WP020 00) for return loss. Set OFFSET dB thumbwheel switches to 9.6.</p>		
<p>c. Remove short circuit termination from directional coupler (channel A).</p>		
<p>d. Connect left rear Antenna-Radome AS-3306/ALR to directional coupler (channel A), using 7mm to TNC male adapter.</p>		
<p align="center"><b>NOTE</b></p> <p>When doing measurement recording, make sure antenna is more than 5 feet from any metal object.</p>		
<p>e. Do Measurement Recording (WP020 00).</p>	<p>Return loss measurement is not less than 9.6 dB for frequency range F6.</p>	<p>Replace left rear Antenna-Radome AS-3306/ALR (A1-F18AC-760-300, WP049 00).</p>



**Table 2. Left Rear High Band RF Line/Antenna Insertion Loss and Return Loss  
(Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>4. FINAL.</p> <p>a. If this is last test, do Shutdown (WP020 00).</p> <p>b. Connect 62P-S012D to J4 on left rear Radar Receiver R-2148A/ALR-67(V).</p> <p>c. Install left rear Antenna-Radome AS-3306/ALR (A1-F18AC-760-300, WP049 00).</p>		

**Table 3. Right Rear High Band RF Circuit Out of Tolerance**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
AN/USM-402A(V)1	Swept Frequency Measurement Test Set	
Materials Required		
Specification or Part Number	Nomenclature	
MS20995NC20	Lockwire	
NOTE		
Rear High Band RF Circuit, Figure 1, must be used with this procedure.		
For locator, refer to WP032 00.		
Malfunction is caused by one of the items listed below:		
Adapter 62CPT035B		
ALR-67 Coax Cable SW425		
ALR-67 Coax Cable SW435		
ALR-67 Coax Cable SW538		
ALR-67 Coax Cable SW539		
Right Rear Band Pass Filter F-1539/ALR-67(V)		
Right Rear Radio Frequency Transmission Switch SA-2362/ALR-67(V)		
Procedure	No	Yes
a. Do substeps below:		
(1) In door 124R, remove lockwire and disconnect 62P-T025A from J1 on right rear Band Pass Filter F-1539/ALR-67(V).		

**Table 3. Right Rear High Band RF Circuit Out of Tolerance (Continued)**

Procedure	No	Yes
(2) Use figure 1 for length, and do Fault Location (WP020 00) on weapon replaceable assemblies (WRAs) from 62P-T017 to 62P-T025A.		
(3) Does unit under test indicate a fault? .....	b	i
b. Do substeps below:		
(1) In door 124R, remove lockwire and disconnect 62P-T025B from J2 on right rear Band Pass Filter F-1539/ALR-67(V).		
(2) Use figure 1 for length, and do Fault Location (WP020 00) on WRAs from 62P-T025B to 62P-T011D.		
(3) Does unit under test indicate a fault? .....	c	d
c. Replace right rear Band Pass Filter F-1539/ALR-67(V) (A1-F18AC-760-300, WP052 00). Do step o. ....	-	-
d. Do substeps below:		
(1) In door 124R, remove lockwire and disconnect 62P-T035C from J3 on right rear Radio Frequency Transmission Switch SA-2362/ALR-67(V).		
(2) Use figure 1 for length, and do Fault Location (WP020 00) on ALR-67 Coax Cable SW538.		
(3) Does unit under test indicate a fault? .....	f	e
e. Replace ALR-67 Coax Cable SW538 (A1-F18AC-760-300, WP069 00). Do step o. ....	-	-
f. Do substep below:		
(1) In door 124R, remove lockwire and disconnect 62P-T035D from J4 on right rear Radio Frequency Transmission Switch SA-2362/ALR-67(V).		
(2) Use figure 1 for length, and do Fault Location (WP020 00) on ALR-67 Coax Cable SW425.		
(3) Does unit under test indicate a fault? .....	g	h
g. Replace right rear Radio Frequency Transmission Switch SA-2362/ALR-67(V) (A1-F18AC-760-300, WP051 00). Do step o. ....	-	-
h. When distance to fault includes connector 62P-T011D, inspect connector for damage. If connector repair is necessary, do connector repair of cable assembly replaceable front ends (A1-F18A( )-WRM-000). When distance to fault does not indicate connector, replace ALR-67 Coax Cable SW425 (A1-F18AC-760-300, WP069 00). Do step o. ....	-	-
i. Do substeps below:		
(1) In door 124R, remove lockwire and disconnect 62P-T035A from J1 on right rear Radio Frequency Transmission Switch SA-2362/ALR-67(V).		

**Table 3. Right Rear High Band RF Circuit Out of Tolerance (Continued)**

Procedure	No	Yes
(2) Use figure 1 for length, and do Fault Location (WP020 00) on ALR-67 Coax Cable SW539.		
(3) Does unit under test indicate a fault? .....	k	j
j. Replace ALR-67 Coax Cable SW539 (A1-F18AC-760-300, WP069 00). Do step o. ....	-	-
k. Do substeps below:		
(1) In door 124R, remove lockwire and disconnect adapter 62CPT035B from J2 on right rear Radio Frequency Transmission Switch SA-2362/ALR-67(V).		
(2) Use figure 1 for length, and do Fault Location (WP020 00) on ALR-67 Coax Cable SW435 and adapter 62CPT035B.		
(3) Does unit under test indicate a fault? .....	g	l
l. Do substeps below:		
(1) Remove lockwire and disconnect adapter 62CPT035B from 62P-T035B.		
(2) Use figure 1 for length, and do Fault Location (WP020 00) on ALR-67 Coax Cable SW435.		
(3) Does unit under test indicate a fault? .....	n	m
m. Replace ALR-67 Coax Cable SW435 (A1-F18AC-760-300, WP068 00). Do step o. ....	-	-
n. Replace adapter 62CPT035B (A1-F18AC-760-300, WP068 00). Do step o. ....	-	-
o. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed or closed:		
(1) 62P-T025A (safety with lockwire)		
(2) 62P-T025B (safety with lockwire)		
(3) 62P-T035A (safety with lockwire)		
(4) 62P-T035B (safety with lockwire)		
(5) 62P-T035C (safety with lockwire)		
(6) 62P-T035D (safety with lockwire)		
(7) Adapter 62CPT035B (safety with lockwire) .....	-	-

**Table 4. Left Rear High Band RF Circuit Out of Tolerance**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
AN/USM-402A(V)1	Swept Frequency Measurement Test Set	
Materials Required		
Specification or Part Number	Nomenclature	
MS20995NC20	Lockwire	
NOTE		
Rear High Band RF Circuit, Figure 1, must be used with this procedure.		
For locator, refer to WP032 00.		
Malfunction is caused by one of the items listed below:		
Adapter 62CPT035B ALR-67 Coax Cable SW425 ALR-67 Coax Cable SW435 ALR-67 Coax Cable SW538 ALR-67 Coax Cable SW539 Left Rear Band Pass Filter F-1539/ALR-67(V) Left Rear Radio Frequency Transmission Switch SA-2362/ALR-67(V)		
Procedure	No	Yes
a. Do substeps below:  (1) In door 124L, remove lockwire and disconnect 62P-S026A from J1 on left rear Band Pass Filter F-1539/ALR-67(V).  (2) Use figure 1 for length, and do Fault Location (WP020 00) on weapon replaceable assemblies (WRAs) from 62P-S018 to 62P-S026A.  (3) Does unit under test indicate a fault? .....	b	i
b. Do substeps below:  (1) In door 124L, remove lockwire and disconnect 62P-S026B from J2 on left rear Band Pass Filter F-1539/ALR-67(V).  (2) Use figure 1 for length, and do Fault Location (WP020 00) on WRA's from 62P-S026B to 62P-S012D.  (3) Does unit under test indicate a fault? .....	c	d

**Table 4. Left Rear High Band RF Circuit Out of Tolerance (Continued)**

Procedure	No	Yes
c. Replace left rear Band Pass Filter F-1539/ALR-67(V) (A1-F18AC-760-300, WP052 00). Do step o. ....	-	-
d. Do substeps below:		
(1) In door 124L, remove lockwire and disconnect 62P-S036C from J3 on left rear Radio Frequency Transmission Switch SA-2362/ALR-67(V).		
(2) Use figure 1 for length, and do Fault Location (WP020 00) on ALR-67 Coax Cable SW538.		
(3) Does unit under test indicate a fault? ....	f	e
e. Replace ALR-67 Coax Cable SW538 (A1-F18AC-760-300, WP069 00). Do step o. ....	-	-
f. Do substep below:		
(1) In door 124L, remove lockwire and disconnect 62P-S036D from J4 on left rear Radio Frequency Transmission Switch SA-2362/ALR-67(V).		
(2) Use figure 1 for length, and do Fault Location (WP020 00) on ALR-67 Coax Cable SW425.		
(3) Does unit under test indicate a fault? ....	g	h
g. Replace left rear Radio Frequency Transmission Switch SA-2362/ALR-67(V) (A1-F18AC-760-300, WP051 00). Do step o. ....	-	-
h. When distance to fault includes connector 62P-S012D, inspect connector for damage. If connector repair is necessary, do connector repair of cable assembly replaceable front ends (A1-F18A( )-WRM-000). When distance to fault does not indicate connector, replace ALR-67 Coax Cable SW425 (A1-F18AC-760-300, WP069 00). Do step o. ....	-	-
i. Do substeps below:		
(1) In door 124L, remove lockwire and disconnect 62P-S036A from J1 on left rear Radio Frequency Transmission Switch SA-2362/ALR-67(V).		
(2) Use figure 1 for length, and do Fault Location (WP020 00) on ALR-67 Coax Cable SW539.		
(3) Does unit under test indicate a fault? ....	k	j
j. Replace ALR-67 Coax Cable SW539 (A1-F18AC-760-300, WP069 00). Do step o. ....	-	-
k. Do substeps below:		
(1) In door 124L, remove lockwire and disconnect adapter 62CPS036B from J2 on left rear Radio Frequency Transmission Switch SA-2362/ALR-67(V).		
(2) Use figure 1 for length, and do Fault Location (WP020 00) on ALR-67 Coax Cable SW435 and adapter 62CPS036B.		
(3) Does unit under test indicate a fault? ....	g	l

**Table 4. Left Rear High Band RF Circuit Out of Tolerance (Continued)**

Procedure	No	Yes
l. Do substeps below:		
(1) Remove lockwire and disconnect adapter 62CPS036B from 62P-S036B.		
(2) Use figure 1 for length, and do Fault Location (WP020 00) on ALR-67 Coax Cable SW435.		
(3) Does unit under test indicate a fault? .....	n	m
m. Replace ALR-67 Coax Cable SW435 (A1-F18AC-760-300, WP068 00). Do step o. ....	-	-
n. Replace adapter 62CPS036B (A1-F18AC-760-300, WP068 00). Do step o. ....	-	-
o. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed or closed:		
(1) 62P-S026A (safety with lockwire)		
(2) 62P-S026B (safety with lockwire)		
(3) 62P-S036A (safety with lockwire)		
(4) 62P-S036B (safety with lockwire)		
(5) 62P-S036C (safety with lockwire)		
(6) 62P-S036D (safety with lockwire)		
(7) Adapter 62CPS036B (safety with lockwire) .....	-	-

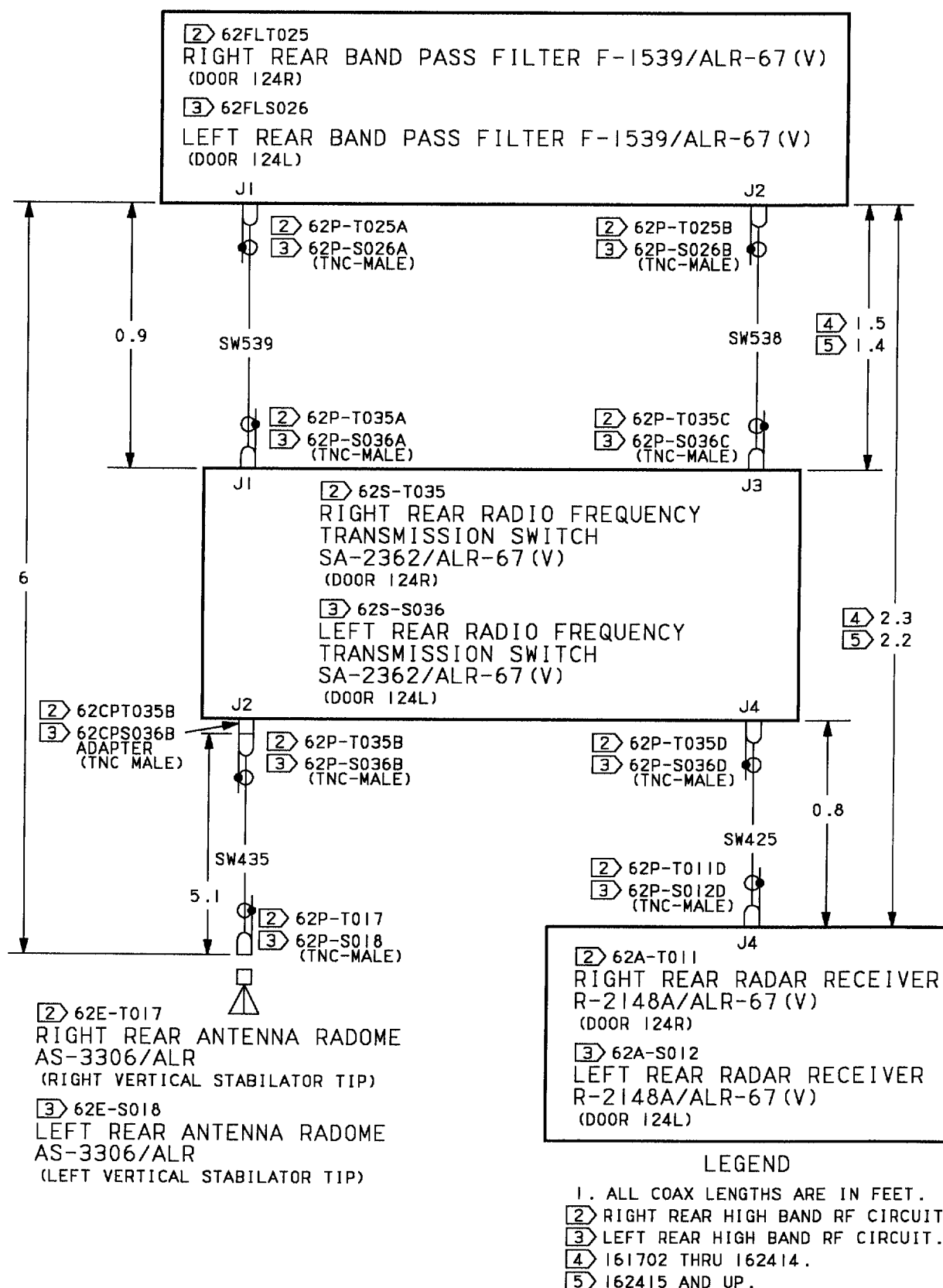


Figure 1. Rear High Band RF Circuits

**THIS PAGE INTENTIONALLY LEFT BLANK.**



---

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TESTING - REAR LOCAL OSCILLATOR LINE INSERTION LOSS**  
**COUNTERMEASURES WARNING AND CONTROL SYSTEM**  
**EFFECTIVITY: 161702 AND UP**

**This WP is incomplete without WP020 00 contained in Confidential Supplement A1-F18AC-760-210/(C).**

---

**Reference Material**

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Line Maintenance Access Doors .....	A1-F18AC-LMM-010
Tactical Electronic Warfare Systems .....	A1-F18AC-760-200
Line/Antenna Return Loss and Insertion Loss .....	WP020 00
Tactical Electronic Warfare Systems .....	A1-F18AC-760-210/(C)
Line/Antenna Return Loss and Insertion Loss .....	WP020 00
Tactical Electronic Warfare Systems .....	A1-F18AC-760-300
Radar Receiver R-2055A/ALR-67(V) .....	WP054 00

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Rear Local Oscillator RF Circuit, Figure 1 .....	14
Table 1. Right and Left Rear Local Oscillator Line Insertion Loss .....	2
Table 2. Right Rear Local Oscillator Line Insertion Loss .....	5
Table 3. Left Rear Local Oscillator Line Insertion Loss .....	7
Table 4. Rear Local Oscillator Circuit Out of Tolerance .....	10
Table 5. Right Rear Local Oscillator Circuit Out of Tolerance .....	12
Table 6. Left Rear Local Oscillator Circuit Out of Tolerance .....	13

**Record of Applicable Technical Directives**

None

Table 1. Right and Left Rear Local Oscillator Line Insertion Loss

Procedure	Normal Indication	Remedy for Abnormal Indication				
<div>System Required Components</div> <div>ALR-67 Coax Cable SW521 installed. ALR-67 Coax Cable SW421 installed. ALR-67 Coax Cable SW423 installed. ALR-67 Coax Cable SW424 installed. Rear Radar Coupler CU-2292/ALR-67(V) installed.</div> <div>Support Equipment Required</div> <div>None</div> <div>Materials Required</div> <table><tr><th>Specification or Part Number</th><th>Nomenclature</th></tr><tr><td>MS20995NC20</td><td>Lockwire</td></tr></table> <div>NOTE</div> <div>For locator, refer to WP032 00.</div>			Specification or Part Number	Nomenclature	MS20995NC20	Lockwire
Specification or Part Number	Nomenclature					
MS20995NC20	Lockwire					
<div>1. PRELIMINARY.</div> <div>a. Make sure electrical power is off (A1-F18AC-LMM-000).</div> <div>b. Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).</div> <div>c. Open door 124R (A1-F18AC-LMM-010).</div> <div>d. Remove lockwire and disconnect 62P-T011C from J3 on right rear Radar Receiver R-2148A/ALR-67(V).</div> <div>e. Open door 124L (A1-F18AC-LMM-010).</div> <div>f. Remove lockwire and disconnect 62P-S012C from J3 on left rear Radar Receiver R-2148A/ALR-67(V).</div>						

**Table 1. Right and Left Rear Local Oscillator Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>NOTE</b></p> <p align="center">Sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00). Use frequency range F5.</p>		
<p>g. Do Initial Setup (WP020 00).</p> <p>2. INSERTION LOSS TEST.</p> <p>a. Do Insertion Loss Setup (WP020 00). Use 7mm to TNC female adapter on directional coupler (channel R) and 7mm to TNC male adapter on directional coupler (channel B).</p> <p>b. Do Recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches:</p> <p>(1) On F/A-18A, set to 8.8.</p> <p>(2) On F/A-18B, set to 8.4.</p> <p>c. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.</p> <p>d. In door 14L, connect 62P-E009H to directional coupler (channel R).</p> <p>e. In door 124R, connect 62P-T011C to directional coupler (channel B).</p> <p>f. In door 124L, connect 62P-S012C to precision termination (50 ohm).</p>		
<p align="center"><b>NOTE</b></p> <p align="center">Note frequency where insertion loss limit is exceeded. This frequency is <math>F_o</math>, used in fault location.</p>		
<p>g. Do Measurement Recording (WP020 00).</p>	<p>On F/A-18A, insertion loss measurement is not greater than 8.8 dB for frequency range F5.</p> <p>On F/A-18B, insertion loss measurement is not greater than 8.4 dB for frequency range F5.</p>	<p>Finish table 1, then do table 4.</p> <p>Finish table 1, then do table 4.</p>
<p>h. Disconnect directional coupler (channel R) from unit under test.</p>		

**Table 1. Right and Left Rear Local Oscillator Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>i. Disconnect directional coupler (channel B) from unit under test.</p> <p>j. Remove precision termination (50 ohm) from 62P-S012C.</p> <p>k. Replace 7mm to TNC female adapter on directional coupler (channel B) with 7mm to TNC male adapter.</p> <p>l. Do Recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches:</p> <p>(1) On F/A-18A, set to 8.7.</p> <p>(2) On F/A-18B, set to 8.2.</p> <p>m. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.</p> <p>n. In door 14L, connect 62P-E009H to directional coupler (channel R).</p> <p>o. In door 124L, connect 62P-S012C to directional coupler (channel B).</p> <p>p. In door 124R, connect 62P-T011C to precision termination (50 ohm).</p>		
<b>NOTE</b>		
Note frequency where insertion loss limit is exceeded. This frequency is $F_0$ , used in fault location.		
<p>q. Do Measurement Recording (WP020 00).</p>	<p>On F/A-18A, insertion loss measurement is not greater than 8.7 dB for frequency range F5.</p> <p>On F/A-18B, insertion loss measurement is not greater than 8.2 dB for frequency range F5.</p>	<p>Do table 4.</p> <p>Do table 4.</p>
<p>3. FINAL.</p> <p>a. If this is last test, do Shutdown (WP020 00).</p> <p>b. Connect 62P-S012C to J3 on left rear Radar Receiver R-2148A/ALR-67(V). Safety with lockwire.</p>		

**Table 1. Right and Left Rear Local Oscillator Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
c. Connect 62P-T011C to J3 on right rear Radar Receiver R-2148A/ALR-67(V). Safety with lockwire.		
<b>NOTE</b>		
If WP039 03 is to be done next, omit step d through step f.		
d. Close door 124L (A1-F18AC-LMM-010).		
e. Close door 124R (A1-F18AC-LMM-010).		
f. Install Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).		

**Table 2. Right Rear Local Oscillator Line Insertion Loss**

Procedure	Normal Indication	Remedy for Abnormal Indication						
<div>System Required Components</div> <div>ALR-67 Coax Cable SW521 installed. ALR-67 Coax Cable SW421 installed. ALR-67 Coax Cable SW423 installed. ALR-67 Coax Cable SW424 installed. Rear Radar Coupler CU-2292/ALR-67(V) installed.</div> <div>Support Equipment Required</div> <div>None</div> <div>Materials Required</div> <table><tr><th>Specification or Part Number</th><th>Nomenclature</th></tr><tr><td>MS20995NC20</td><td>Lockwire</td></tr></table> <div>NOTE</div> <div>For locator, refer to WP032 00.</div> <div><div>1. PRELIMINARY.</div><div><div>a. Make sure electrical power is off (A1-F18AC-LMM-000).</div><div>b. Remove Radar Receiver R-2066A/ALR-67(V) (A1-F18AC-760-300, WP054 00).</div></div></div>			Specification or Part Number	Nomenclature	MS20995NC20	Lockwire		
Specification or Part Number	Nomenclature							
MS20995NC20	Lockwire							

**Table 2. Right Rear Local Oscillator Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>c. Open door 124R (A1-F18AC-LMM-010).</p> <p>d. Remove lockwire and disconnect 62P-T011C from J3 on right rear Radar Receiver R-2148A/ALR-67(V).</p> <p>e. Open door 124L (A1-F18AC-LMM-010).</p> <p>f. Remove lockwire and disconnect 62P-S012C from J3 on left rear Radar Receiver R-2148A/ALR-67(V).</p>		
<b>NOTE</b>		
Sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00). Use frequency range F5.		
<p>g. Do Initial Setup (WP020 00).</p> <p>2. INSERTION LOSS TEST.</p> <p>a. Do Insertion Loss Setup (WP020 00). Use 7mm to TNC female adapter on directional coupler (channel R) and 7mm to TNC male adapter on directional coupler (channel B).</p> <p>b. Do Recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches:</p> <p style="padding-left: 40px;">(1) On F/A-18A, set to 8.8.</p> <p style="padding-left: 40px;">(2) On F/A-18B, set to 8.4.</p> <p>c. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.</p> <p>d. In door 14L, connect 62P-E009H to directional coupler (channel R).</p> <p>e. In door 124R, connect 62P-T011C to directional coupler (channel B).</p> <p>f. In door 124L, connect 62P-S012C to precision termination (50 ohm).</p>		

**Table 2. Right Rear Local Oscillator Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p style="text-align: center;"><b>NOTE</b></p> <p>Note frequency where insertion loss limit is exceeded. This frequency is <math>F_0</math>, used in fault location.</p>		
g. Do Measurement Recording (WP020 00).	On F/A-18A, insertion loss measurement is not greater than 8.8 dB for frequency range F5.	Do table 5.
	On F/A-18B, insertion loss measurement is not greater than 8.4 dB for frequency range F5.	Do table 5.
3. FINAL.		
a. If this is last test, do Shutdown (WP020 00).		
b. Connect 62P-S012C to J3 on left rear Radar Receiver R-2148A/ALR-67(V). Safety with lockwire.		
c. Close door 124L (A1-F18AC-LMM-010).		
d. Connect 62P-T011C to J3 on right rear Radar Receiver R-2148A/ALR-67(V). Safety with lockwire.		
e. Close door 124R (A1-F18AC-LMM-010).		
f. Install Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).		

**Table 3. Left Rear Local Oscillator Line Insertion Loss**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p style="text-align: center;"><b>System Required Components</b></p> <p>ALR-67 Coax Cable SW521 installed.  ALR-67 Coax Cable SW421 installed.  ALR-67 Coax Cable SW423 installed.  ALR-67 Coax Cable SW424 installed.  Rear Radar Coupler CU-2292/ALR-67(V) installed.</p>		

**Table 3. Left Rear Local Oscillator Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<b>Support Equipment Required</b>		
None		
<b>Materials Required</b>		
<b>Specification or Part Number</b>	<b>Nomenclature</b>	
MS20995NC20	Lockwire	
<b>NOTE</b>		
For locator, refer to WP032 00.		
1. PRELIMINARY.  a. Make sure electrical power is off (A1-F18AC-LMM-000).  b. Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).  c. Open door 124R (A1-F18AC-LMM-010).  d. Remove lockwire and disconnect 62P-T011C from J3 on right rear Radar Receiver R-2148A/ALR-67(V).  e. Open door 124L (A1-F18AC-LMM-010).  f. Remove lockwire and disconnect 62P-S012C from J3 on left rear Radar Receiver R-2148A/ALR-67(V).		
<b>NOTE</b>		
Sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00). Use frequency range F5.		
g. Do Initial Setup (WP020 00).		
2. INSERTION LOSS TEST.  a. Do Insertion Loss Setup (WP020 00). Use 7mm to TNC female adapter on directional coupler (channel R) and 7mm to TNC male adapter on direc-tional coupler (channel B).		



**Table 3. Left Rear Local Oscillator Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>b. Do Recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches:</p> <p>(1) On F/A-18A, set to 8.8.</p> <p>(2) On F/A-18B, set to 8.4.</p> <p>c. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.</p> <p>d. In door 14L, connect 62P-E009H to directional coupler (channel R).</p> <p>e. In door 124R, connect 62P-S012C to directional coupler (channel B).</p> <p>f. In door 124L, connect 62P-T011C to precision termination (50 ohm).</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p>Note frequency where insertion loss limit is exceeded. This frequency is <math>F_o</math>, used in fault location.</p>		
<p>g. Do Measurement Recording (WP020 00).</p>	<p>On F/A-18A, insertion loss measurement is not greater than 8.8 dB for frequency range F5.</p> <p>On F/A-18B, insertion loss measurement is not greater than 8.4 dB for frequency range F5.</p>	<p>Do table 6.</p> <p>Do table 6.</p>
<p>3. FINAL.</p> <p>a. If this is last test, do Shutdown (WP020 00).</p> <p>b. Connect 62P-S012C to J3 on left rear Radar Receiver R-2148A/ALR-67(V). Safety with lockwire.</p> <p>c. Close door 124L (A1-F18AC-LMM-010).</p> <p>d. Connect 62P-T011C to J3 on right rear Radar Receiver R-2148/ALR-67(V). Safety with lockwire.</p> <p>e. Close door 124R (A1-F18AC-LMM-010).</p> <p>f. Install Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).</p>		

**Table 4. Rear Local Oscillator Circuit Out of Tolerance**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
AN/USM-402A(V)1	Swept Frequency Measurement Test Set	
Materials Required		
Specification or Part Number	Nomenclature	
MS20995NC20	Lockwire	
NOTE		
Rear Local Oscillator Circuit, Figure 1, must be used with this procedure.		
For locator, refer to WP032 00.		
Malfunction is caused by one of the items listed below:		
ALR-67 Coax Cable SW521		
ALR-67 Coax Cable SW421		
ALR-67 Coax Cable SW423		
ALR-67 Coax Cable SW424		
Rear Radar Coupler CU-2292/ALR-67(V)		
Procedure	No	Yes
a. Did both insertion loss measurements exceed maximum allowable insertion loss value? . . . .	b	h
b. Did the first insertion loss measurement exceed maximum allowable insertion loss value? . . . . .	c	f
c. Do substeps below:		
(1) Open door 40 (A1-F18AC-LMM-010).		
(2) Remove lockwire and disconnect 62P-P024B (gray) from J2 on rear Radar Coupler CU-2292/ALR-67(V).		
(3) Use figure 1 for length and do Fault Location (WP020 00) on ALR-67 Coax Cable SW424.		
(4) Does unit under test indicate a fault? . . . . .	d	e
d. Replace rear Radar Coupler CU-2292/ALR-67(V) (A1-F18AC-760-300, WP053 00). Do step j. . . . .	-	-

**Table 4. Rear Local Oscillator Circuit Out of Tolerance (Continued)**

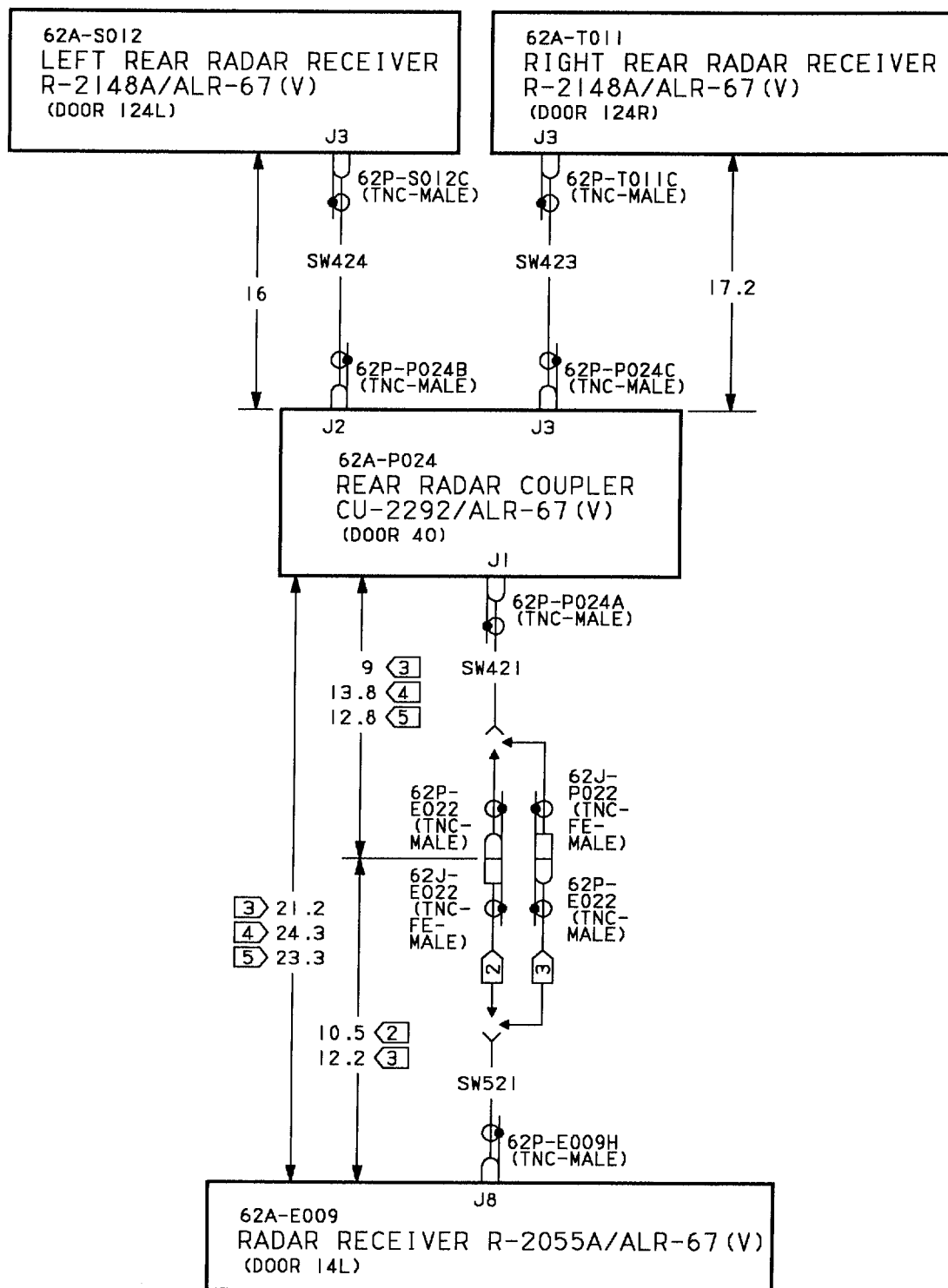
Procedure	No	Yes
e. When distance to fault includes coax connectors 62P-S012C or 62P-P024B, inspect connector for damage. If connector repair is necessary, do connector repair of cable assembly replaceable front ends (A1-F18A( )-WRM-000). When distance to fault does not indicate connector, replace ALR-67 Coax Cable SW424 (A1-F18AC-760-300, WP067 00). Do step j. ....	-	-
f. Do substeps below:		
(1) Open door 40 (A1-F18AC-LMM-010).		
(2) Remove lockwire and disconnect connector 62P-P024C (green) from J3 on rear Radar Coupler CU-2292/ALR-67(V).		
(3) Use figure 1 for length and do Fault Location (WP020 00) on ALR-67 Coax Cable SW423.		
(4) Does unit under test indicate a fault? ....	c	g
g. When distance to fault includes coax connector 62P-T011C or 62P-P024C, inspect connector for damage. If connector repair is necessary, do connector repair of cable assembly replaceable front ends (A1-F18A( )-WRM-000). When distance to fault does not indicate connector, replace ALR-67 Coax Cable SW423 (A1-F18AC-760-300, WP067 00). Do step j. ....	-	-
h. Do substeps below:		
(1) Open door 40 (A1-F18AC-LMM-010).		
(2) Remove lockwire and disconnect 62P-P024A from J1 on rear Radar Coupler CU-2292/ALR-67(V).		
(3) Use figure 1 for length, and do Fault Location (WP020 00) on ALR-67 Coax Cable SW521 and ALR-67 Coax Cable SW421.		
(4) Does unit under test indicate a fault? ....	d	i
i. When distance to fault includes coax connector 62P-E009H or 62J-E022, inspect connector for damage. If connector repair is necessary, do connector repair of cable assembly replaceable front ends (A1-F18A( )-WRM-000). When distance to fault does not indicate connector, replace the indicated coax cable, ALR-67 Coax Cable SW521 (A1-F18AC-760-300, WP070 00) or ALR-67 Coax Cable SW421 (A1-F18AC-760-300, WP066 00). Do step j. ....	-	-
j. If disconnected, removed, or opened during this procedure, make sure items listed are connected, installed or closed:		
(1) 62P-P024A (safety with lockwire)		
(2) 62P-P024B (gray) (safety with lockwire)		
(3) 62P-P024C (green) (safety with lockwire)		
(4) Door 40 ....	-	-

**Table 5. Right Rear Local Oscillator Circuit Out of Tolerance**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
AN/USM-402A(V)1	Swept Frequency Measurement Test Set	
Materials Required		
Specification or Part Number	Nomenclature	
MS20995NC20	Lockwire	
NOTE		
Rear Local Oscillator Circuit, Figure 1, must be used with this procedure.		
For locator, refer to WP032 00.		
Malfunction is caused by one of the items listed below:		
ALR-67 Coax Cable SW423		
Rear Radar Coupler CU-2292/ALR-67(V)		
Procedure	No	Yes
a. Do substeps below:		
(1) Open door 40 (A1-F18AC-LMM-010).		
(2) Remove lockwire and disconnect 62P-P024C (green) from J3 on rear Radar Coupler CU-2292/ALR-67(V).		
(3) Use figure 1 for length and do Fault Location (WP020 00) on ALR-67 Coax Cable SW423.		
(4) Does unit under test indicate a fault? .....	b	c
b. Replace rear Radar Coupler CU-2292/ALR-67(V) (A1-F18AC-760-300, WP053 00). Do step d. ....	-	-
c. When distance to fault includes connector 62P-P024C or 62P-T011C, inspect connector for damage. If connector repair is necessary, do connector repair of cable assembly replaceable front ends (A1-F18( )-WRM-000). When distance to fault does not indicate connector, replace ALR-67 Coax Cable SW423 (A1-F18AC-760-300, WP067 00). Do step d. ....	-	-
d. If disconnected, removed or opened during this procedure, make sure items listed are connected, installed or opened:		
(1) 62P-P024C (green) (safety with lockwire)		
(2) Door 40 .....	-	-

**Table 6. Left Rear Local Oscillator Circuit Out of Tolerance**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
AN/USM-402A(V)1	Swept Frequency Measurement Test Set	
Materials Required		
Specification or Part Number	Nomenclature	
MS20995NC20	Lockwire	
NOTE		
Rear Local Oscillator Circuit, Figure 1, must be used with this procedure.		
For locator, refer to WP032 00.		
Malfunction is caused by one of the items listed below:		
ALR-67 Coax Cable SW424		
Rear Radar Coupler CU-2292/ALR-67(V)		
Procedure	No	Yes
a. Do substeps below:		
(1) Open door 40 (A1-F18AC-LMM-010).		
(2) Remove lockwire and disconnect 62P-P024B (gray) from J2 on rear Radar Coupler CU-2292/ALR-67(V).		
(3) Use figure 1 for length and do Fault Location (WP020 00) on ALR-67 Coax Cable SW424.		
(4) Does unit under test indicate a fault? .....	b	c
b. Replace rear Radar Coupler CU-2292/ALR-67(V) (A1-F18AC-760-300, WP053 00). Do step d. ....	-	-
c. When distance to fault includes connector 62P-P024B or 62P-S012C, inspect connector for damage. If connector repair is necessary, do connector repair of cable assembly replaceable front ends (A1-F18A( )-WRM-000). When distance to fault does not indicate connector, replace ALR-67 Coax Cable SW424 (A1-F18AC-760-300, WP067 00). Do step d. ....	-	-
d. If disconnected, removed or opened during this procedure, make sure items listed are connected, installed or opened:		
(1) 62P-P024B (gray) (safety with lockwire)		
(2) Door 40 .....	-	-



### LEGEND

1. ALL COAX CABLE LENGTHS ARE IN FEET.  
 2 F/A-18A.  
 3 F/A-18B.  
 4 F/A-18A 161702 THRU 161951.  
 5 F/A-18A 161952 AND UP.

### Figure 1. Rear Local Oscillator RF Circuit

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TESTING - REAR HIGH BAND IF LINE INSERTION LOSS**  
**COUNTERMEASURES WARNING AND CONTROL SYSTEM**  
**EFFECTIVITY: 161702 AND UP**

**This WP is incomplete without WP020 00 contained in Confidential Supplement A1-F18AC-760-210/(C).**

### Reference Material

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Line Maintenance Access Doors .....	A1-F18AC-LMM-010
Tactical Electronic Warfare Systems .....	A1-F18AC-760-200
Line/Antenna Return Loss and Insertion Loss .....	WP020 00
Tactical Electronic Warfare Systems .....	A1-F18AC-760-210/(C)
Line/Antenna Return Loss and Insertion Loss .....	WP020 00
Tactical Electronic Warfare Systems .....	A1-F18AC-760-300
Radar Receiver R-2055A/ALR-67(V) .....	WP054 00

### Alphabetical Index

Subject	Page No.
Rear High Band IF Circuits, Figure 1 .....	9
Table 1. Right Rear High Band IF Line Insertion Loss .....	1
Table 2. Left Rear High Band IF Line Insertion Loss .....	4
Table 3. Right Rear High Band IF Line Out of Tolerance .....	6
Table 4. Left Rear High Band IF Line Out of Tolerance .....	7

### Record of Applicable Technical Directives

None

**Table 1. Right Rear High Band IF Line Insertion Loss**

Procedure	Normal Indication	Remedy for Abnormal Indication
<b>System Required Components</b>		
ALR-67 Coax Cable SW420 installed.		
ALR-67 Coax Cable SW520 installed.		
<b>Support Equipment Required</b>		
None		
<b>Materials Required</b>		
<b>Specification or Part Number</b>	<b>Nomenclature</b>	
MS20995NC20	Lockwire	

**Table 1. Right Rear High Band IF Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">For locator, refer to WP032 00.</p>		
<p>1. PRELIMINARY.</p> <p>a. Make sure electrical power is off (A1-F18AC-LMM-000).</p> <p>b. Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).</p> <p>c. Open door 124R (A1-F18AC-LMM-010).</p> <p>d. Remove lockwire and disconnect 62P-T011B from J2 on right rear Radar Receiver R-2148A/ALR-67(V).</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00). Use frequency range F2.</p>		
<p>e. Do Initial Setup (WP020 00).</p> <p>2. INSERTION LOSS TEST.</p> <p>a. Do Insertion Loss Setup (WP020 00). Use 7mm to TNC female adapter on directional coupler (channel R) and 7mm to TNC male adapter on directional coupler (channel B).</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Multiple reference line recordings are required for frequency range F2.</p>		
<p>b. Do Recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches:</p> <p>On F/A-18A, set to</p> <p>(1) 8.2</p> <p>(2) 8.6</p> <p>On F/A-18B, set to</p> <p>(1) 7.7</p> <p>(2) 8.0</p>		



**Table 1. Right Rear High Band IF Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>c. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.</p> <p>d. Connect 62P-E009B to directional coupler (channel R) and 62P-T011B to directional coupler (channel B).</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p>Note frequency where insertion loss limit is exceeded. This frequency is <math>F_0</math>, used in fault location.</p>		
<p>e. Do Measurement Recording (WP020 00).</p>	<p>On F/A-18A, insertion loss measurement is not greater than 8.2 dB the first 50% of frequency range F2, and 8.6 dB for remaining 50%.</p> <p>On F/A-18B, insertion loss measurement is not greater than 7.7 dB the first 50% of frequency range F2, and 8.0 dB for remaining 50%.</p>	<p>Do table 3.</p> <p>Do table 3.</p>
<p>3. FINAL.</p> <p>a. In door 124R, connect 62P-T011B to J2 on right rear Radar Receiver R-2148/ALR-67(V). Safety with lockwire</p> <p>b. Close door 124R (A1-F18AC-LMM-010).</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p>If table 2 is to be done next, omit step c and step d.</p>		
<p>c. If this is last test, do Shutdown (WP020 00).</p> <p>d. Install Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).</p>		

**Table 2. Left Rear High Band IF Line Insertion Loss**

Procedure	Normal Indication	Remedy for Abnormal Indication													
<div>System Required Components</div> <div>ALR-67 Coax Cable SW422 installed. ALR-67 Coax Cable SW522 installed.</div> <div>Support Equipment Required</div> <div>None</div> <div>Materials Required</div> <table><tr><th>Specification or Part Number</th><th>Nomenclature</th></tr><tr><td>MS20995NC20</td><td>Lockwire</td></tr></table> <div>NOTE</div> <div>For locator, refer to WP032 00.</div> <div><table><tr><td>1. PRELIMINARY.  a. Make sure electrical power is off (A1-F18AC-LMM-000).  b. Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).  c. Open door 124L (A1-F18AC-LMM-010).  d. Remove lockwire and disconnect 62P-S012B from J2 on left rear Radar Receiver R-2148A/ALR-67(V).</td><td></td><td></td></tr></table></div> <div>NOTE</div> <div>Sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00). Use frequency range F2.</div> <div><table><tr><td>e. Do Initial Setup (WP020 00).</td><td></td><td></td></tr><tr><td>2. INSERTION LOSS TEST.  a. Do Insertion Loss Setup (WP020 00). Use 7mm to TNC female adapter on directional coupler (channel R) and 7mm to TNC male adapter on directional coupler (channel B).</td><td></td><td></td></tr></table></div>			Specification or Part Number	Nomenclature	MS20995NC20	Lockwire	1. PRELIMINARY.  a. Make sure electrical power is off (A1-F18AC-LMM-000).  b. Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).  c. Open door 124L (A1-F18AC-LMM-010).  d. Remove lockwire and disconnect 62P-S012B from J2 on left rear Radar Receiver R-2148A/ALR-67(V).			e. Do Initial Setup (WP020 00).			2. INSERTION LOSS TEST.  a. Do Insertion Loss Setup (WP020 00). Use 7mm to TNC female adapter on directional coupler (channel R) and 7mm to TNC male adapter on directional coupler (channel B).		
Specification or Part Number	Nomenclature														
MS20995NC20	Lockwire														
1. PRELIMINARY.  a. Make sure electrical power is off (A1-F18AC-LMM-000).  b. Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).  c. Open door 124L (A1-F18AC-LMM-010).  d. Remove lockwire and disconnect 62P-S012B from J2 on left rear Radar Receiver R-2148A/ALR-67(V).															
e. Do Initial Setup (WP020 00).															
2. INSERTION LOSS TEST.  a. Do Insertion Loss Setup (WP020 00). Use 7mm to TNC female adapter on directional coupler (channel R) and 7mm to TNC male adapter on directional coupler (channel B).															

**Table 2. Left Rear High Band IF Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>NOTE</b></p> <p align="center">Multiple reference line recordings are required for frequency range F2.</p> <p>b. Do Recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches:</p> <p>On F/A-18A, set to</p> <p>(1) 8.2</p> <p>(2) 8.6</p> <p>On F/A-18B, set to</p> <p>(1) 7.7</p> <p>(2) 8.0</p> <p>c. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.</p> <p>d. Connect 62P-E009C to directional coupler (channel R) and 62P-S012B to directional coupler (channel B).</p>		
<p align="center"><b>NOTE</b></p> <p align="center">Note frequency where insertion loss limit is exceeded. This frequency is <math>F_0</math>, used in fault location.</p>		
e. Do Measurement Recording (WP020 00).	<p>On F/A-18A, insertion loss measurement is not greater than 8.2 dB the first 50% of frequency range F2, and 8.6 dB for remaining 50%.</p> <p>On F/A-18B, insertion loss measurement is not greater than 7.7 dB the first 50% of frequency range F2, and 8.0 dB for remaining 50%.</p>	<p>Do table 4.</p> <p>Do table 4.</p>
3. FINAL.		
a. In door 124L, connect 62P-S012B to J2 on left rear Radar Receiver R-2148A/ALR-67(V). Safety with lockwire		
b. Close door 124L (A1-F18AC-LMM-010).		

**Table 2. Left Rear High Band IF Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If WP039 04 is to be done next, omit step c and step d.</p> <p>c. If this is last test, do Shutdown (WP020 00).</p> <p>d. Install Radar Receiver R-2055A/ ALR-67(V) (A1-F18AC-760-300, WP054 00).</p>		

**Table 3. Right Rear High Band IF Line Out of Tolerance**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
AN/USM-402A(V)1	Swept Frequency Measurement Test Set	
Materials Required		
Specification or Part Number	Nomenclature	
MS20995NC20	Lockwire	
Rear High Band IF Circuit, Figure 1, must be used with this procedure.		
For locator, refer to WP032 00.		
Malfunction is caused by one of the items listed below:		
ALR-67 Coax Cable SW420		
ALR-67 Coax Cable SW520		
Procedure	No	Yes
a. Do substeps below:		
(1) Use figure 1 for length and do Fault Location (WP020 00) on ALR-67 Coax Cable SW420 and ALR-67 Coax Cable SW520.		
(2) Does ALR-67 Coax Cable SW420 indicate a fault? .....	b	c

**Table 3. Right Rear High Band IF Line Out of Tolerance (Continued)**

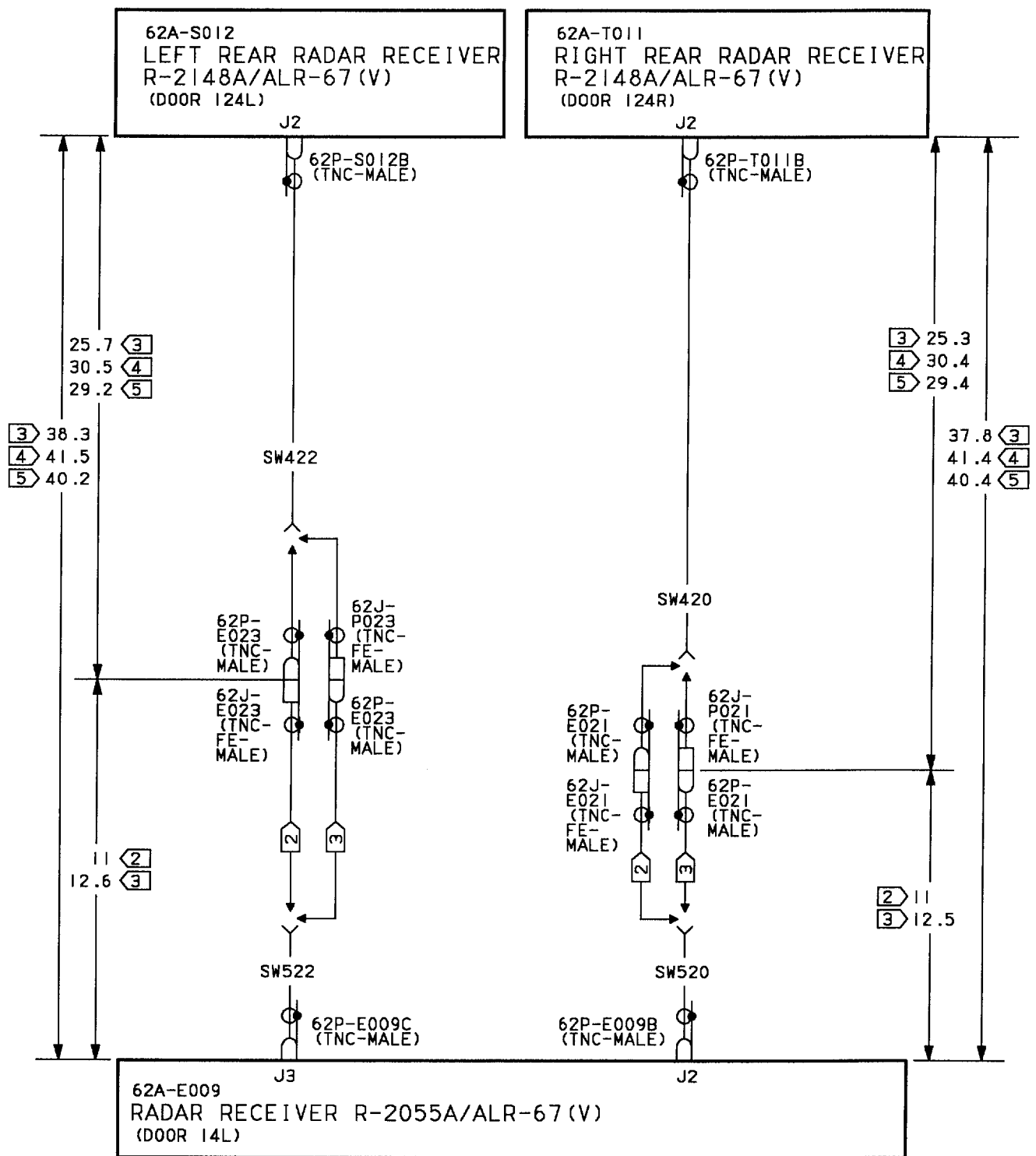
Procedure	No	Yes
b. Do substeps below:		
(1) On F/A-18A, when distance to fault includes connectors 62P-E009B, 62J-E021 or 62P-E021, inspect connector for damage. If connector repair is necessary, do connector repair of cable assembly replaceable front ends (A1-F18A( )-WRM-000). When distance to fault does not indicate connector, replace ALR-67 Coax Cable SW520 (A1-F18AC-760-300, WP070 00). . . . .	-	-
(2) On F/A-18B, when distance to fault includes connectors 62P-E009B, 62P-E021 or 62J-P021, inspect connector for damage. If connector repair is necessary, do connector repair of cable assembly replaceable front ends (A1-F18A( )-WRM-000). When distance to fault does not indicate connector, replace ALR-67 Coax Cable SW520 (A1-F18AC-760-300, WP070 00). . . . .	-	-
c. Do substeps below:		
(1) On F/A-18A, when distance to fault includes connectors 62P-T011B, 62P-E021 or 62J-E021, inspect connector for damage. If connector repair is necessary, do connector repair of cable assembly replaceable front ends (A1-F18A( )-WRM-000). When distance to fault does not indicate connector, replace ALR-67 Coax Cable SW420 (A1-F18AC-760-300, WP065 00). . . . .	-	-
(2) On F/A-18B, when distance to fault includes connectors 62P-T011B, 62J-P021 or 62P-E021, inspect connector for damage. If connector repair is necessary, do connector repair of cable assembly replaceable front ends (A1-F18A( )-WRM-000). When distance to fault does not indicate connector, replace ALR-67 Coax Cable SW420 (A1-F18AC-760-300, WP065 00). . . . .	-	-

**Table 4. Left Rear High Band IF Line Out of Tolerance**

Support Equipment Required	
Part Number or Type Designation	Nomenclature
AN/USM-402A(V)1	Swept Frequency Measurement Test Set
Materials Required	
Specification or Part Number	Nomenclature
MS20995NC20	Lockwire
NOTE	
Rear High Band IF Circuit, Figure 1, must be used with this procedure.	
For locator, refer to WP032 00.	

**Table 4. Left Rear High Band IF Line Out of Tolerance (Continued)**

Malfunction is caused by one of the items listed below:		
ALR-67 Coax Cable SW422 ALR-67 Coax Cable SW522		
Procedure	No	Yes
a. Do substeps below:		
(1) Use figure 1 for length and do Fault Location (WP020 00) on ALR-67 Coax Cable SW422 and ALR-67 Coax Cable SW522.		
(2) Does ALR-67 Coax Cable SW422 indicate a fault? .....	b	c
b. Do substeps below:		
(1) On F/A-18A, when distance to fault includes connectors 62P-E009C, 62J-E023 or 62P-E023, inspect connector for damage. If connector repair is necessary, do connector repair of cable assembly replaceable front ends (A1-F18A( )-WRM-000). When distance to fault does not indicate connector, replace ALR-67 Coax Cable SW522 (A1-F18AC-760-300, WP070 00). .....	-	-
(2) On F/A-18B, when distance to fault includes connectors 62P-E009C, 62P-E023 or 62J-P023, inspect connector for damage. If connector repair is necessary, do connector repair of cable assembly replaceable front ends (A1-F18A( )-WRM-000). When distance to fault does not indicate connector, replace ALR-67 Coax Cable SW522 (A1-F18AC-760-300, WP070 00). .....	-	-
c. Do substeps below:		
(1) On F/A-18A, when distance to fault includes connectors 62P-S012B, 62P-E023 or 62J-E023, inspect connector for damage. If connector repair is necessary, do connector repair of cable assembly replaceable front ends (A1-F18A( )-WRM-000). When distance to fault does not indicate connector, replace ALR-67 Coax Cable SW422 (A1-F18AC-760-300, WP065 00). .....	-	-
(2) On F/A-18B, when distance to fault includes connectors 62P-S012B, 62J-P023 or 62P-E023, inspect connector for damage. If connector repair is necessary, do connector repair of cable assembly replaceable front ends (A1-F18A( )-WRM-000). When distance to fault does not indicate connector, replace ALR-67 Coax Cable SW422 (A1-F18AC-760-300, WP065 00). .....	-	-



## LEGEND

1. ALL COAX CABLE LENGTHS ARE IN FEET.
- 2 F/A-18A.
- 3 F/A-18B.
- 4 F/A-18A 161702 THRU 161951.
- 5 F/A-18A 161952 AND UP.

Figure 1. Rear High Band IF Circuits

**THIS PAGE INTENTIONALLY LEFT BLANK.**



**ORGANIZATIONAL MAINTENANCE****TESTING AND TROUBLESHOOTING****TESTING - FORWARD HIGH BAND IF LINE INSERTION LOSS****COUNTERMEASURES WARNING AND CONTROL SYSTEM****EFFECTIVITY: 161702 AND UP**

This WP is incomplete without WP020 00 contained in Confidential Supplement A1-F18AC-760-210/(C).

**Reference Material**

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Tactical Electronic Warfare Systems .....	A1-F18AC-760-200
Line/Antenna Return Loss and Insertion Loss .....	WP020 00
Tactical Electronic Warfare Systems .....	A1-F18AC-760-210/(C)
Line/Antenna Return Loss and Insertion Loss .....	WP020 00
Tactical Electronic Warfare Systems .....	A1-F18AC-760-300
Radar Receiver R-2055A/ALR-67(V) .....	WP054 00

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Forward High Band IF Circuits, Figure 1 .....	6
Table 1. Right Forward High Band IF Line Insertion Loss .....	1
Table 2. Left Forward High Band IF Line Insertion Loss .....	3

**Record of Applicable Technical Directives**

None

**Table 1. Right Forward High Band IF Line Insertion Loss**

<b>Procedure</b>	<b>Normal Indication</b>	<b>Remedy for Abnormal Indication</b>
<b>System Required Components</b>		
ALR-67 Coax Cable SW523 installed.		
<b>Support Equipment Required</b>		
None		
<b>Materials Required</b>		
None		

**Table 1. Right Forward High Band IF Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">For locator, refer to WP032 00.</p>		
<p>1. PRELIMINARY.</p> <p>a. Make sure electrical power is off (A1-F18AC-LMM-000).</p> <p>b. Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).</p> <p>c. Remove right forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00). Use frequency range F2.</p>		
<p>d. Do Initial Setup (WP020 00).</p> <p>2. INSERTION LOSS TEST.</p> <p>a. Do Insertion Loss Setup (WP020 00). Use 7mm to TNC female adapter on directional coupler (channel R) and 7mm to TNC male adapter on directional coupler (channel B).</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Multiple reference line recordings are required for frequency range F2.</p>		
<p>b. Do Recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches to:</p> <p style="margin-left: 40px;">(1) 8.0</p> <p style="margin-left: 40px;">(2) 10.0</p> <p>c. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.</p> <p>d. Connect 62P-E009A to directional coupler (channel R) and 62P-B010B to directional coupler (channel B).</p>		

**Table 1. Right Forward High Band IF Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
e. Do Measurement Recording (WP020 00).	Insertion loss measurement is not greater than 8.0 dB the first 50% of frequency range F2, and 10.0 dB for remaining 50%.	1. Inspect connectors for damage and replace if necessary (A1-F18AC-WRM-000, WP137 00).  2. If no damage to connectors, replace ALR-67 Coax Cable SW623 (A1-F18AC-760-300, WP061 00).
3. FINAL.		
<b>NOTE</b>		
If table 2 is to be done next, omit steps a through step c.		
a. Install right forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).		
b. If this is last test, do Shutdown (WP020 00).		
c. Install Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).		

**Table 2. Left Forward High Band IF Line Insertion Loss**

Procedure	Normal Indication	Remedy for Abnormal Indication
<b>System Required Components</b>		
ALR-67 Coax Cable SW525 installed.		
<b>Support Equipment Required</b>		
None		
<b>Materials Required</b>		
None		
<b>NOTE</b>		
For locator, refer to WP032 00.		
1. PRELIMINARY.		
a. Make sure electrical power is off (A1-F18AC-LMM-000).		
b. Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).		

**Table 2. Left Forward High Band IF Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
c. Remove left forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00). Use frequency range F2.</p>		
d. Do Initial Setup (WP020 00).		
2. INSERTION LOSS TEST.		
a. Do Insertion Loss Setup (WP020 00). Use 7mm to TNC female adapter on directional coupler (channel R) and 7mm to TNC male adapter on directional coupler (channel B).		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Multiple reference line recordings are required for frequency range F2.</p>		
b. Do Recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches to:		
(1) 6.5		
(2) 8.5		
c. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.		
d. Connect 62P-E009D to directional coupler (channel R) and 62P-A013B to directional coupler (channel B).		
e. Do Measurement Recording (WP020 00).	Insertion loss measurement is not greater than 6.5 dB the first 50% of frequency range F2, and 8.5 dB for remaining 50%.	<p>1. Inspect connectors for damage and replace if necessary (A1-F18AC-WRM-000, WP137 00).</p> <p>2. If no damage to connectors, replace ALR-67 Coax Cable SW525 (A1-F18AC-760-300, WP061 00).</p>

**Table 2. Left Forward High Band IF Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
3. FINAL.		
<b>NOTE</b>		
If WP039 05 is to be done next, omit steps a through step c.		
a. If this is last test, do Shutdown (WP020 00).		
b. Install left forward Rear Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).		
c. Install Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).		

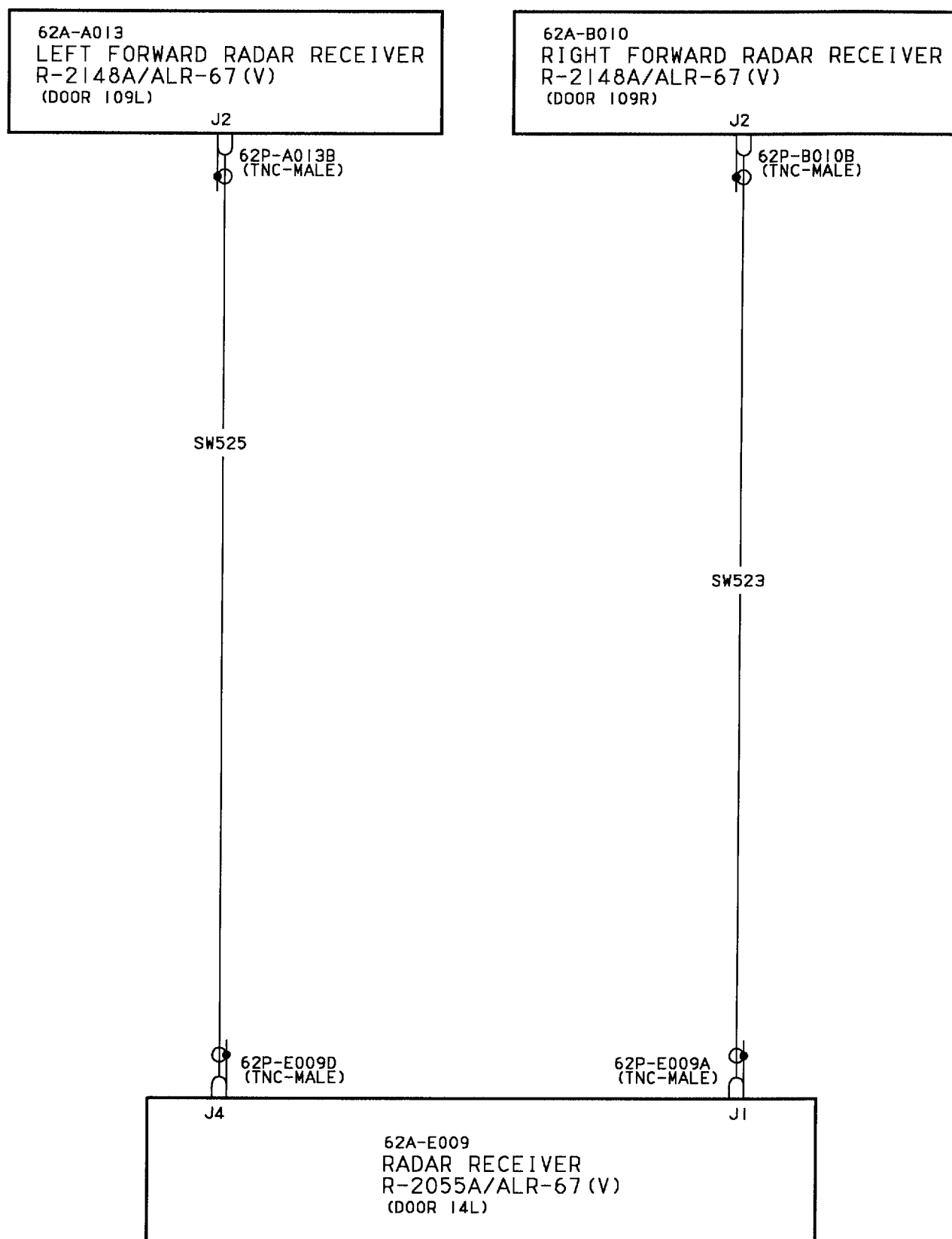


Figure 1. Forward High Band IF Circuits

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TESTING - FORWARD LOCAL OSCILLATOR LINE INSERTION LOSS**  
**COUNTERMEASURES WARNING AND CONTROL SYSTEM**  
**EFFECTIVITY: 161702 AND UP**

**This WP is incomplete without WP020 00 contained in Confidential Supplement A1-F18AC-760-210/(C).**

### Reference Material

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Tactical Electronic Warfare Systems .....	A1-F18AC-760-200
Line/Antenna Return Loss and Insertion Loss .....	WP020 00
Tactical Electronic Warfare Systems .....	A1-F18AC-760-210/(C)
Line/Antenna Return Loss and Insertion Loss .....	WP020 00
Tactical Electronic Warfare Systems .....	A1-F18AC-760-300
Radar Receiver R-2055A/ALR-67(V) .....	WP054 00
Right Forward Radar Receiver R-2148A/ALR-67(V) .....	WP043 00
Left Forward Radar Receiver R-2148A/ALR-67(V) .....	WP043 00

### Alphabetical Index

Subject	Page No.
Forward Local Oscillator RF Circuit, Figure 1 .....	13
Table 1. Right and Left Forward Local Oscillator Line Insertion Loss .....	1
Table 2. Right Forward Local Oscillator Line Insertion Loss .....	4
Table 3. Left Forward Local Oscillator Line Insertion Loss .....	6
Table 4. Forward Local Oscillator Circuit Out of Tolerance .....	8
Table 5. Right Forward Local Oscillator Circuit Out of Tolerance .....	10
Table 6. Left Forward Local Oscillator Circuit Out of Tolerance .....	11

### Record of Applicable Technical Directives

None

**Table 1. Right and Left Forward Local Oscillator Line Insertion Loss**

Procedure	Normal Indication	Remedy for Abnormal Indication
<b>System Required Components</b>		
ALR-67 Coax Cable SW475 installed. ALR-67 Coax Cable SW476 installed. ALR-67 Coax Cable SW524 installed. Forward Radar Coupler CU-2292/ALR-67(V) installed.		

**Table 1. Right and Left Forward Local Oscillator Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>Support Equipment Required</b></p> <p align="center">None</p> <p align="center"><b>Materials Required</b></p> <p align="center">None</p> <p align="center"><b>NOTE</b></p> <p align="center">For locator, refer to WP032 00.</p>		
<p>1. PRELIMINARY.</p> <p>a. Make sure electrical power is off (A1-F18AC-LMM-000).</p> <p>b. Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).</p> <p>c. Remove right forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).</p> <p>d. Remove left forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).</p>		
<p align="center"><b>NOTE</b></p> <p align="center">Sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00). Use frequency range F5.</p>		
<p>e. Do Initial Setup (WP020 00).</p> <p>2. INSERTION LOSS TEST.</p> <p>a. Do Insertion Loss Setup (WP020 00). Use 7mm to TNC female adapter on directional coupler (channel R) and 7mm to TNC male adapter on directional coupler (channel B).</p> <p>b. Do Recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches to 8.0.</p> <p>c. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.</p>		



**Table 1. Right and Left Forward Local Oscillator Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>d. In door 14L, connect 62P-E009G to directional coupler (channel R).</p> <p>e. In door 109R, connect 62P-B010C to directional coupler (channel B).</p> <p>f. In door 109L, connect 62P-A013C to precision termination (50 ohm).</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p>Note frequency where insertion loss limit is exceeded. This frequency is <math>F_0</math>, used in fault location.</p>		
<p>g. Do Measurement Recording (WP020 00).</p> <p>h. Disconnect directional coupler (channel R) from unit under test.</p> <p>i. Disconnect directional coupler (channel B) from unit under test.</p> <p>j. Remove precision termination (50 ohm) from 62P-A013C.</p> <p>k. Replace 7mm to TNC female adapter on directional coupler (channel B) with 7mm to TNC male adapter.</p> <p>l. Do recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches 7.6.</p> <p>m. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.</p> <p>n. In door 14L, connect 62P-E009G to directional coupler (channel R).</p> <p>o. In door 109L, connect 62P-A013C to directional coupler (channel B).</p> <p>p. In door 109R, connect 62P-B010C to precision termination (50 ohm).</p>	<p>Insertion loss measurement is not greater than 8.0 dB for frequency range F5.</p>	<p>Finish table 1, then do table 4.</p>

**Table 1. Right and Left Forward Local Oscillator Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>NOTE</b></p> <p>Note frequency where insertion loss limit is exceeded. This frequency is <math>F_0</math>, used in fault location.</p>		
<p>q. Do Measurement Recording (WP020 00).</p> <p>3. FINAL.</p>	<p>Insertion loss measurement is not greater than 7.6 dB for frequency range F5.</p>	<p>Do table 4.</p>
<p align="center"><b>NOTE</b></p> <p>If WP039 06 is to be done next, omit step a through step d.</p>		
<p>a. If this is last test, do Shutdown (WP020 00).</p> <p>b. Install right forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).</p> <p>c. Install left forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).</p> <p>d. Install Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).</p>		

**Table 2. Right Forward Local Oscillator Line Insertion Loss**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>System Required Components</b></p> <p>ALR-67 Coax Cable SW475 installed.  ALR-67 Coax Cable SW476 installed.  ALR-67 Coax Cable SW524 installed.  Forward Radar Coupler CU-2292/ALR-67(V) installed.</p> <p align="center"><b>Support Equipment Required</b></p> <p align="center">None</p> <p align="center"><b>Materials Required</b></p> <p align="center">None</p>		

**Table 2. Right Forward Local Oscillator Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">For locator, refer to WP032 00.</p>		
<p>1. PRELIMINARY.</p> <p>a. Make sure electrical power is off (A1-F18AC-LMM-000).</p> <p>b. Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).</p> <p>c. Remove right forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).</p> <p>d. Remove left forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00). Use frequency range F5.</p>		
<p>e. Do Initial Setup (WP020 00).</p> <p>2. INSERTION LOSS TEST.</p> <p>a. Do Insertion Loss Setup (WP020 00). Use 7mm to TNC female adapter on directional coupler (channel R) and 7mm to TNC male adapter on directional coupler (channel B).</p> <p>b. Do Recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches to 8.0.</p> <p>c. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.</p> <p>d. In door 14L, connect 62PE009G to directional coupler (channel R).</p> <p>e. In door 109R, connect 62PB010C to directional coupler (channel B).</p> <p>f. In door 109L, connect 62PA013C to precision termination (50 ohm).</p>		

**Table 2. Right Forward Local Oscillator Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>NOTE</b></p> <p align="center">Note frequency where insertion loss limit is exceeded. This frequency is <math>F_0</math>, used in fault location.</p>		
<p>g. Do Measurement Recording (WP020 00).</p> <p>3. FINAL.</p> <p>a. If this is last test, do Shutdown (WP020 00).</p> <p>b. Install right forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).</p> <p>c. Install left rear Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).</p> <p>d. Install Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).</p>	<p>Insertion loss measurement is not greater than 8.0 dB for frequency range F5.</p>	<p>Do table 5.</p>

**Table 3. Left Forward Local Oscillator Line Insertion Loss**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>System Required Components</b></p> <p align="center">ALR-67 Coax Cable SW475 installed.  ALR-67 Coax Cable SW476 installed.  ALR-67 Coax Cable SW524 installed.  Forward Radar Coupler CU-2292/ALR-67(V) installed.</p> <p align="center"><b>Support Equipment Required</b></p> <p align="center">None</p> <p align="center"><b>Materials Required</b></p> <p align="center">None</p> <p align="center"><b>NOTE</b></p> <p align="center">For locator, refer to WP032 00.</p>		
<p>1. PRELIMINARY.</p> <p>a. Make sure electrical power is off (A1-F18AC-LMM-000).</p>		

**Table 3. Left Forward Local Oscillator Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
b. Remove Radar Receiver R-2065A/ALR-67(V) (A1-F18AC-760-300, WP054 00). c. Remove right forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00). d. Remove left forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00). Use frequency range F5.</p>		
e. Do Initial Setup (WP020 00). <b>2. INSERTION LOSS TEST.</b> a. Do Insertion Loss Setup (WP020 00). Use 7mm to TNC female adapter on directional coupler (channel R) and 7mm to TNC male adapter on directional coupler (channel B). b. Do Recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches to 7.6. c. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter. d. In door 14L, connect 62P-E009G to directional coupler (channel R). e. In door 109L, connect 62P-A013C to directional coupler (channel B). f. In door 109R, connect 62P-B010C to precision termination (50 ohm).		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Note frequency where insertion loss limit is exceeded. This frequency is <math>F_o</math>, used in fault location.</p>		
g. Do Measurement Recording (WP020 00).	Insertion loss measurement is not greater than 7.6 dB for frequency range F5.	Do table 6.

**Table 3. Left Forward Local Oscillator Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
3. FINAL. a. If this is last test, do Shutdown (WP020 00). b. Install right forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00). c. Install left forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00). d. Install Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).		

**Table 4. Forward Local Oscillator Circuit Out of Tolerance**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
AN/USM-402A(V)1	Swept Frequency Measurement Test Set	
Materials Required		
Specification or Part Number	Nomenclature	
MS20995NC20	Lockwire	
NOTE		
Forward Local Oscillator Circuit, Figure 1, must be used with this procedure.		
For locator, see WP032 00.		
Malfunction is caused by one of the items below:		
ALR-67 Coax Cable SW475		
ALR-67 Coax Cable SW476		
ALR-67 Coax Cable SW524		
Forward Radar Coupler CU-2292/ALR-67(V)		
Procedure	No	Yes
a. Did both insertion loss measurements exceed maximum allowable insertion loss value? . . . .	b	h
b. Did first insertion loss measurement exceed maximum allowable insertion loss value? . . . .	c	f

**Table 4. Forward Local Oscillator Circuit Out of Tolerance (Continued)**

Procedure	No	Yes
c. Do substeps below:		
(1) Remove 20MM gun (A1-F18AC-750-300, WP003 00).		
(2) Remove lockwire and disconnect 62P-A0208B (gray) from J2 on forward Radar Coupler CU-2292/ALR-67(V).		
(3) Use figure 1 for length and do Fault Location (WP020 00) on ALR-67 Coax Cable SW476.		
(4) Did unit under test indicate a fault? .....	d	e
d. Replace forward Radar Coupler CU-2292/ALR-67(V) (A1-F18AC-760-300, WP047 00). Do step j. ....	-	-
e. When distance to fault includes coax connectors 62P-A028B or 62P-A013C, inspect connector for damage and replace connector if necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not indicate connector, replace ALR-67 Coax Cable SW476 (A1-F18AC-760-300, WP063 00). Do step j. ....	-	-
f. Do substeps below:		
(1) Remove 20MM gun (A1-F18AC-750-300, WP003 00).		
(2) Remove lockwire and disconnect 62P-A028C (green) from J3 on forward Radar Coupler CU-2292/ALR-67(V).		
(3) Use figure 1 for length and do Fault Location (WP020 00) on ALR-67 Coax Cable SW475.		
(4) Did unit under test indicate a fault? .....	d	g
g. When distance to fault includes coax connector 62P-A028C or 62P-B010C, inspect connector for damage and replace connector if necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not include connector, replace ALR-67 Coax Cable SW475 (A1-F18AC-760-300, WP063 00). Do step j. ....	-	-
h. Do substep below:		
(1) Remove 20MM gun (A1-F18AC-750-300, WP003 00).		
(2) Remove lockwire and disconnect 62P-A028A from J1 on forward Radar Coupler CU-2292/ALR-67(V).		
(3) Use figure 1 for length and do Fault Location (WP020 00) on ALR-67 Coax Cable SW524.		
(4) Did unit under test indicate a fault? .....	d	i
i. When distance to fault includes coax connector 62P-A028A or 62P-E009G, inspect connector for damage and replace connector if necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not include connector, replace ALR-67 Coax Cable SW524 (A1-F18AC-760-300, WP064 00). Do step j. ....	-	-

**Table 4. Forward Local Oscillator Circuit Out of Tolerance (Continued)**

Procedure	No	Yes
j. If disconnected, removed or opened during this procedure make sure items listed are connected, installed or closed:		
(1) 62P-A028A (safety with lockwire)		
(2) 62P-A028B (gray) (safety with lockwire)		
(3) 62P-A028C (green) (safety with lockwire)		
(4) 20MM gun .....	-	-

**Table 5. Right Forward Local Oscillator Circuit Out of Tolerance**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
AN/USM-402A(V)1	Swept Frequency Measurement Test Set	
Materials Required		
Specification or Part Number	Nomenclature	
MS20995NC20	Lockwire	
NOTE		
Forward Local Oscillator Circuit, Figure 1, must be used with this procedure.		
For locator, see WP032 00		
Malfunction is caused by one of the items below:		
ALR-67 Coax Cable SW475		
Forward Radar Coupler CU-2292/ALR-67(V)		
Procedure	No	Yes
a. Do substeps below:		
(1) Remove 20MM gun (A1-F18AC-750-300, WP003 00).		
(2) Remove lockwire and disconnect 62P-A0208C (green) from J3 on forward Radar Coupler CU-2292/ALR-67(V).		
(3) Use figure 1 for length and do Fault Location (WP020 00) on ALR-67 Coax Cable SW475.		
(4) Did unit under test indicate a fault? .....	b	c



**Table 5. Right Forward Local Oscillator Circuit Out of Tolerance (Continued)**

Procedure	No	Yes
b. Replace forward Radar Coupler CU-2292/ALR-67(V) (A1-F18AC-760-300, WP047 00). Do step d. ....	-	-
c. When distance to fault includes coax connectors 62P-A028C (green) or 62P-B010C, inspect connector for damage and replace connector if necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not indicate connector, replace ALR-67 Coax Cable SW476 (A1-F18AC-760-300, WP063 00). Do step d. ....	-	-
d. If disconnected, removed or opened during this procedure, make sure items listed are connected, installed or closed:		
(1) 62P-A028C (green) (safety with lockwire)		
(2) 20MM gun .....	-	-

**Table 6. Left Forward Local Oscillator Circuit Out of Tolerance**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
AN/USM-402A(V)1	Swept Frequency Measurement Test Set	
Materials Required		
Specification or Part Number	Nomenclature	
MS20995NC20	Lockwire	
NOTE		
Forward Local Oscillator Circuit, Figure 1, must be used with this procedure.		
For locator, see WP032 00.		
Malfunction is caused by one of the items below:		
ALR-67 Coax Cable SW476		
Forward Radar Coupler CU-2292/ALR-67(V)		
Procedure	No	Yes
a. Do substeps below:		
(1) Remove 20MM gun (A1-F18AC-750-300, WP003 00).		
(2) Remove lockwire and disconnect 62P-A0208B (gray) from J2 on forward Radar Coupler CU-2292/ALR-67(V).		

**Table 6. Left Forward Local Oscillator Circuit Out of Tolerance (Continued)**

Procedure	No	Yes
(3) Use figure 1 for length and do Fault Location (WP020 00) on ALR-67 Coax Cable SW476.		
(4) Did unit under test indicate a fault? .....	b	c
b. Replace forward Radar Coupler CU-2292/ALR-67(V) (A1-F18AC-760-300, WP047 00). Do step d. ....	-	-
c. When distance to fault includes coax connectors 62P-A028B (gray) or 62P-A013C, inspect connector for damage and replace connector if necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not indicate connector, replace ALR-67 Coax Cable SW476 (A1-F18AC-760-300, WP063 00). Do step d. ....	-	-
d. If disconnected, removed or opened during this procedure, make sure items listed are connected, installed or closed:		
(1) 62P-A028B (gray) (safety with lockwire)		
(2) 20MM gun .....	-	-

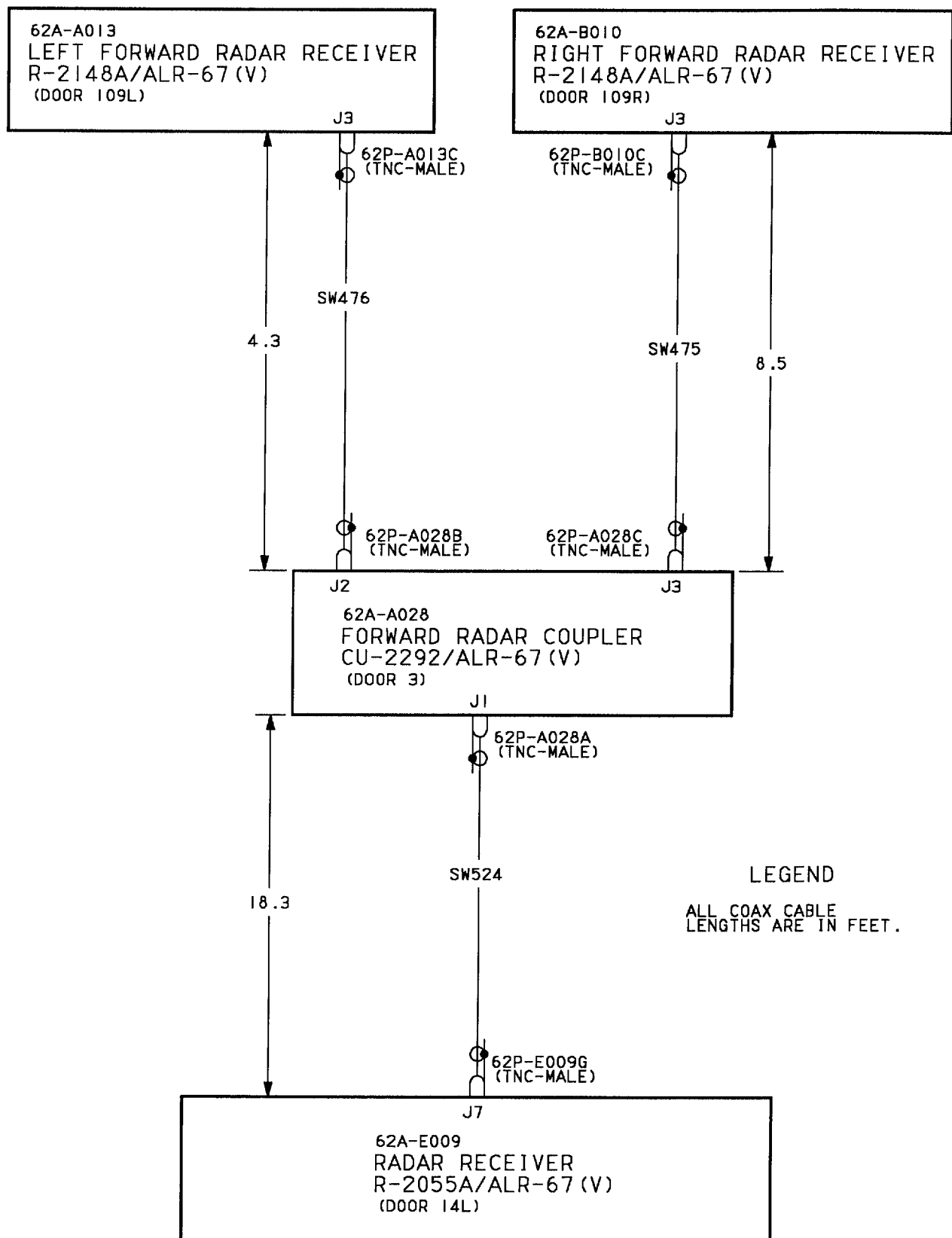


Figure 1. Forward Local Oscillator RF Circuit

**THIS PAGE INTENTIONALLY LEFT BLANK.**

**ORGANIZATIONAL MAINTENANCE****TESTING AND TROUBLESHOOTING****TESTING - FORWARD HIGH BAND RF LINE/ANTENNA INSERTION LOSS AND RETURN LOSS****COUNTERMEASURES WARNING AND CONTROL SYSTEM****EFFECTIVITY: 161702 AND UP**

**This WP is incomplete without WP020 00 contained in Confidential Supplement A1-F18AC-760/210/(C).**

**Reference Material**

Line Maintenance Procedures .....	A1-F18AC-LMM-000
Line Maintenance Access Doors .....	A1-F18AC-LMM-010
Radar System .....	A1-F18AC-742-300
Extension and Stowage of Radar Set AN/APG-85 .....	WP003 00
Tactical Electronic Warfare Systems .....	A1-F18AC-760-200
Line/Antenna Return Loss and Insertion Loss .....	WP020 00
Tactical Electronic Warfare Systems .....	A1-F18AC-760-210/(C)
Line/Antenna Return Loss and Insertion Loss .....	WP020 00

**Alphabetical Index**

<b>Subject</b>	<b>Page No.</b>
Forward High Band RF Circuits, Figure 1 .....	17
Table 1. Right Forward High Band RF Line/Antenna Insertion Loss and Return Loss .....	1
Table 2. Left Forward High Band RF Line/Antenna Insertion Loss and Return Loss .....	6
Table 3. Right Forward High Band RF Circuit Out of Tolerance .....	11
Table 4. Left Forward High Band RF Circuit Out of Tolerance .....	13

**Record of Applicable Technical Directives**

None

**Table 1. Right Forward High Band RF Line/Antenna Insertion Loss and Return Loss**

<b>Procedure</b>	<b>Normal Indication</b>	<b>Remedy for Abnormal Indication</b>
<b>System Required Components</b>		
Right Forward High Band Antenna Circuit installed.		
<b>Support Equipment Required</b>		
None		

**Table 1. Right Forward High Band RF Line/Antenna Insertion Loss and Return Loss  
(Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<b>Materials Required</b>		
<b>Specification or Part Number</b>		<b>Nomenclature</b>
MS20995NC20		Lockwire
<b>NOTE</b>		
For locator, refer to WP032 00.		
1. PRELIMINARY.		
a. Make sure electrical power is off (A1-F18AC-LMM-000).		
b. Open door 3 (A1-F18AC-LMM-010).		
e. Extend Radar Set AN/APG-65 (A1-F18AC-742-300, WP003 00).		
d. Remove lockwire and disconnect connector 62P-B015 from right forward Antenna-Radome AS-3359/ALR.		
e. Remove right forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).		
<b>NOTE</b>		
Sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00). Use frequency range F2.		
f. Do Initial Setup (WP020 00).		
2. INSERTION LOSS TEST.		
a. Do Insertion Loss Setup (WP020 00). Use 7mm to TNC female adapter on directional coupler (channel R) and 7mm to TNC male adapter on directional coupler (channel B).		

**Table 1. Right Forward High Band RF Line/Antenna Insertion Loss and Return Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>NOTE</b></p> <p>Multiple reference line recordings are required for frequency range F2.</p> <p>b. Do Recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches to:</p> <p>(1) 7.0 (2) 8.0</p> <p>c. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.</p> <p>d. Connect 62P-B015 to directional coupler (channel R) and 62P-B010D to directional coupler (channel B).</p>		
<p align="center"><b>NOTE</b></p> <p>Note frequency where insertion loss limit is exceeded. This frequency is <math>F_0</math>, used in fault location.</p>		
e. Do Measurement Recording (WP020 00).	Insertion loss measurement is not greater than 7.0 dB the first 50% of frequency range F2 and 8.0 dB for the remaining 50%.	Do table 3.
<p align="center"><b>NOTE</b></p> <p>The frequency range of interest for the unit under test requires more than one frequency selection on the controller and sweep oscillator. This procedure will be done for each frequency selection. Use frequency range F3.</p>		
f. Disconnect directional coupler (channel R) and directional coupler (channel B) from unit under test.		
g. Replace 7mm to TNC female adapter on directional coupler (channel B) with 7mm to TNC male adapter.		
h. Connect 7mm to TNC female adapter on directional coupler (channel R) to 7mm to TNC male adapter on directional coupler (channel B).		

**Table 1. Right Forward High Band RF Line/Antenna Insertion Loss and Return Loss  
(Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>NOTE</b></p> <p>Multiple reference line recordings are required for frequency range F3.</p> <p>i. Do Recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches to:</p> <p>(1) 9.0 (2) 9.9</p> <p>j. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.</p> <p>k. Connect 62P-B015 to directional coupler (channel R) and 62P-B010D to directional coupler (channel B).</p>		
<p align="center"><b>NOTE</b></p> <p>Right forward Band Pass Filter F-1539/ALR-67(V) will cause a notch in insertion loss measurement which exceeds the maximum allowable insertion loss limit.</p> <p>The attenuated frequency range (FR-1) is listed in Band Suppression Frequency Range, table 3 (A1-F18AC-760-210/(C), WP020 00).</p> <p>Note frequency where insertion loss limit is exceeded (ignoring band pass filter notch). This frequency is <math>F_o</math>, used in fault location.</p>		
<p>l. Do Measurement Recording (WP020 00).</p> <p>m. Apply electrical power (A1-F18AC-LMM-000).</p> <p>n. On GND PWR control panel assembly, set 3 switch to A ON and hold for 3 seconds.</p>	<p>1. Insertion loss measurement is not greater than 9.0 dB the first 50% of frequency range F3 and 9.9 dB for remaining 50%.</p> <p>2. The attenuated frequency range is equal to FR-1.</p>	<p>Do table 3.</p> <p>Replace right forward Band Pass Filter F-1539/ALR-67(V) (A1-F18AC-760-300, WP045 00).</p>



**Table 1. Right Forward High Band RF Line/Antenna Insertion Loss and Return Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>NOTE</b></p> <p>With exception of notch caused by right forward Band Pass Filter F-1539/ALR-67(V), measurement recording may be superimposed on previous measurement recording.</p>		
<p>o. Do Measurement Recording (WP020 00).</p> <p>p. Remove electrical power (A1-F18AC-LMM-000).</p> <p>3. RETURN LOSS TEST.</p>	<p>Insertion loss measurement is not greater than 9.0 dB the first 50% of frequency range F3 and 9.9 dB for remaining 50%.</p>	<p>Replace right forward Radio Frequency Transmission Switch SA-2362/ALR-67(V) (A1-F18AC-760-300, WP044 00).</p>
<p align="center"><b>NOTE</b></p> <p>Sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00). Use frequency range F6.</p>		
<p>a. Do Return Loss Setup (WP020 00).</p> <p>b. Do Recorder Reference Line Recording (WP020 00) for return loss. Set OFFSET dB thumbwheel switches to 9.6.</p> <p>c. Remove short-circuit termination from directional coupler (channel A).</p> <p>d. Connect right forward Antenna-Radome AS-3395/ALR to directional coupler (channel A), using 7mm to TNC male adapter.</p>		
<p align="center"><b>NOTE</b></p> <p>When doing measurement recording, make sure antenna is more than 5 feet from any metal object.</p>		
<p>e. Do Measurement Recording (WP020 00).</p> <p>4. FINAL.</p> <p>a. If this is last test, do Shutdown (WP020 00).</p>	<p>Return loss measurement is not less than 9.6 dB for frequency F6.</p>	<p>Replace right forward Antenna-Radome AS-3395/ALR (A1-F18AC-760-300, WP041 00).</p>

**Table 1. Right Forward High Band RF Line/Antenna Insertion Loss and Return Loss  
(Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
b. Install right forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).  c. Connect 62P-B015 to right forward Antenna-Radome AS-3359/ALR, and safety with lockwire.		
<b>NOTE</b>  If table 2 is to be done next, omit steps d and e.		
d. Stow Radar Set AN/APG-65 (A1-F18AC-742-300, WP003 00).  e. Close door 3 (A1-F18AC-LMM-010).		

**Table 2. Left Forward High Band RF Line/Antenna Insertion Loss and Return Loss**

Procedure	Normal Indication	Remedy for Abnormal Indication
<b>System Required Components</b>  Left Forward High Band Antenna Circuit installed.		
<b>Support Equipment Required</b>  None		
<b>Materials Required</b>		
<b>Specification or Part Number</b>  MS20995NC20		<b>Nomenclature</b>  Lockwire
<b>NOTE</b>  For locator, refer to WP032 00.		
1. PRELIMINARY.  a. Make sure electrical power is off (A1-F18AC-LMM-000).  b. Open door 3 (A1-F18AC-LMM-010).		

**Table 2. Left Forward High Band RF Line/Antenna Insertion Loss and Return Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>c. Extend Radar Set AN/APG-65 (A1-F18AC-742-300, WP003 00).</p> <p>d. Remove lockwire and disconnect connector 62P-A020 from left forward Antenna-Radome AS-3360/ALR.</p> <p>e. Remove left forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00). Use frequency range F2.</p>		
<p>f. Do Initial Setup (WP020 00).</p> <p>2. INSERTION LOSS TEST.</p> <p>a. Do Insertion Loss Setup (WP020 00). Use 7mm to TNC female adapter on directional coupler (channel R) and 7mm to TNC male adapter on directional coupler (channel B).</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Multiple reference line recordings are required for frequency range F2.</p>		
<p>b. Do Recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches to:</p> <p style="margin-left: 40px;">(1) 7.0 (2) 8.0</p> <p>c. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.</p> <p>d. Connect 62P-A020 to directional coupler (channel R) and 62P-A013D to directional coupler (channel B).</p>		

**Table 2. Left Forward High Band RF Line/Antenna Insertion Loss and Return Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>NOTE</b></p> <p>Note frequency where insertion loss limit is exceeded. This frequency is <math>F_o</math>, used in fault location.</p>		
e. Do Measurement Recording (WP020 00).	Insertion loss measurement is not greater than 7.0 dB the first 50% of frequency range F2 and 8.0 dB for remaining 50%.	Do table 4.
<p align="center"><b>NOTE</b></p> <p>The frequency range of interest for the unit under test requires more than one frequency selection on the controller and sweep oscillator. This procedure will be done for each frequency selection. Use frequency range F3.</p>		
f. Disconnect directional coupler (channel R) and directional coupler (channel B) from unit under test.		
g. Replace 7mm to TNC female adapter on directional coupler (channel B) with 7mm to TNC male adapter.		
h. Connect 7mm to TNC female adapter on directional coupler (channel R) to 7mm to TNC male adapter on directional coupler (channel B).		
<p align="center"><b>NOTE</b></p> <p>Multiple reference line recordings are required for frequency range F3.</p>		
i. Do Recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches to:		
(1) 9.0		
(2) 9.9		
j. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.		
k. Connect 62P-A020 to directional coupler (channel R) and 62P-A013D to directional coupler (channel B).		

**Table 2. Left Forward High Band RF Line/Antenna Insertion Loss and Return Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>NOTE</b></p> <p>Left forward Band Pass Filter F-1539/ALR-67(V) will cause a notch in insertion loss measurement which exceeds the maximum allowable insertion loss limit.</p> <p>Note frequency where insertion loss limit is exceeded (ignoring band pass filter notch). This frequency is <math>F_o</math>, used in fault location.</p> <p>The attenuated frequency range (FR-1) is listed in Band Suppression Frequency Range, table 3 (A1-F18AC-760-210/(C), WP020 00).</p>		
<p>1. Do Measurement Recording (WP020 00).</p> <p>m. Apply electrical power (A1-F18AC-LMM-000).</p> <p>n. On GND PWR control panel assembly, set 3 switch to A ON and hold for 3 seconds.</p>	<p>1. Insertion loss measurement is not greater than 9.0 dB the first 50% of frequency range F3 and 9.9 dB for remaining 50%.</p> <p>2. The attenuated frequency range is equal to FR-1.</p>	<p>Do table 4.</p> <p>Replace left forward Band Pass Filter F-1539/ALR-67(V) (A1-F18AC-760-300, WP046 00).</p>
<p align="center"><b>NOTE</b></p> <p>With exception of notch caused by left forward Band Pass Filter F-1639/ALR-67(V), measurement recording may be superimposed on previous measurement recording.</p>		
<p>o. Do Measurement Recording (WP020 00).</p> <p>p. Remove electrical power (A1-F18AC-LMM-000).</p> <p>3. RETURN LOSS TEST.</p>	<p>Insertion loss measurement is not greater than 9.0 dB the first 50% of frequency range F3 and 9.9 dB for remaining 50%.</p>	<p>Replace left forward Radio Frequency Transmission Switch SA-2362/ALR-67(V) (A1-F18AC-760-300, WP044 00).</p>
<p align="center"><b>NOTE</b></p> <p>Sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00). Use frequency range F6.</p>		
<p>a. Do Return Loss Setup (WP020 00).</p>		

**Table 2. Left Forward High Band RF Line/Antenna Insertion Loss and Return Loss  
(Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p>b. Do Recorder Reference Line Recording (WP020 00) for return loss. Set OFFSET dB thumbwheel switches to 9.6.</p> <p>c. Remove short circuit termination from directional coupler (channel A).</p> <p>d. Connect left forward Antenna-Radome AS-3360/ALR to directional coupler (channel A), using 7mm to TNC male adapter.</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">When doing Measurement Recording, make sure antenna is more than 5 feet from any metal object.</p>		
<p>e. Do Measurement Recording (WP020 00).</p> <p>4. FINAL.</p> <p>a. If this is last test, do Shutdown (WP020 00).</p> <p>b. Install left forward Radar Receiver R-2148A/ALR-67(V) (A1-F18AC-760-300, WP043 00).</p> <p>c. Connect 62P-A020 to left forward Antenna-Radome AS-3360/ALR, and safety with lockwire.</p> <p>d. Stow Radar Set AN/APG-65 (A1-F18AC-742-300, WP003 00).</p> <p>e. Close door 3 (A1-F18AC-LMM-010).</p>	<p>Return loss measurement is not less than 9.6 dB for frequency F6.</p>	<p>Replace left forward Antenna-Radome AS-3360/ALR (A1-F18AC-760-300, WP042 00).</p>

**Table 3. Right Forward High Band RF Circuit Out of Tolerance**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
AN/USM-402A(V)1	Swept Frequency Measurement Test Set	
Materials Required		
Specification or Part Number	Nomenclature	
MS20995NC20	Lockwire	
NOTE		
Forward High Band RF Circuit, Figure 1, must be used with this procedure.		
For locator, see WP032 00.		
Malfunction is caused by one of the items below:		
ALR-67 Coax Cable SW528 ALR-67 Coax Cable SW536 ALR-67 Coax Cable SW537 ALR-67 Coax Cable SW555 Right Forward Band Pass Filter F-1539/ALR-67(V) Right Forward Radio Frequency Transmission Switch SA-2362/ALR-67(V)		
Procedure	No	Yes
a. Do substeps below:		
(1) Extend Radar Set AN/APG-65 (A1-F18AC-742-300, WP003 00).		
(2) In door 3, remove lockwire and disconnect 62P-B016A from J1 on right forward Band Pass Filter F-1539/ALR-67(V).		
(3) Use figure 1 for length, and do Fault Location (WP020 00) on weapon replaceable assemblies (WRAs) from 62P-B015 to 62P-B016A.		
(4) Does unit under test indicate a fault? .....	b	i
b. Do substeps below:		
(1) In door 3, remove lockwire and disconnect 62P-B016B from J2 on right forward Band Pass Filter F-1539/ALR-67(V).		
(2) Use figure 1 for length, and do Fault Location (WP020 00) on WRAs from 62P-B016B to 62P-B010D.		
(3) Does unit under test indicate a fault? .....	c	d

**Table 3. Right Forward High Band RF Circuit Out of Tolerance (Continued)**

Procedure	No	Yes
c. Replace right forward Band Pass Filter F-1539/ALR-67(V) (A1-F18AC-760-300, WP045 00). Do step m. ....	-	-
d. Do substeps below:		
(1) In door 109R, remove lockwire and disconnect 62P-B029C (blue) from J3 on right forward Radio Frequency Transmission switch SA-2362/ALR-67(V).		
(2) Use figure 1 for length, and do Fault Location (WP020 00) on ALR-67 Coax Cable SW537.		
(3) Does unit under test indicate a fault? ....	f	e
e. When distance to fault includes connector 62P-B016B or 62P-B029C, inspect connector for damage and replace connector if necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not include connector, replace ALR-67 Coax Cable SW537 (A1-F18AC-760-300, WP060 00). Do step m. ....	-	-
f. Do substeps below:		
(1) In door 109R, remove lockwire and disconnect 62P-B029D (gray) from J4 on right forward Radio Frequency Transmission Switch SA-2362/ALR-67(V).		
(2) Use figure 1 for length, and do Fault Location (WP020 00) on ALR-67 Coax Cable SW528.		
(3) Does unit under test indicate a fault? ....	g	h
g. Replace right forward Radio Frequency Transmission Switch SA-2362/ALR-67(V) (A1-F18AC-760-300, WP044 00). Do step m. ....	-	-
h. When distance to fault includes connector 62P-B029D or 62P-B010D, inspect connector for damage and replace connector if necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not include connector, replace ALR-67 Coax Cable SW528 (A1-F18AC-760-300, WP060 00). Do step m. ....	-	-
i. Do substeps below:		
(1) In door 109R, remove lockwire and disconnect 62P-B029A (green) from J1 on right forward Radio Frequency Transmission switch SA-2362/ALR-67(V).		
(2) Use figure 1 for length, and do Fault Location (WP020 00) on ALR-67 Coax Cable SW536.		
(3) Does unit under test indicate a fault? ....	k	j
j. When distance to fault includes connector 62P-B016A or 62P-B029A, inspect connector for damage and replace connector if necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not include connector, replace ALR-67 Coax Cable SW536 (A1-F18AC-760-300, WP060 00). Do step m. ....	-	-



**Table 3. Right Forward High Band RF Circuit Out of Tolerance (Continued)**

Procedure	No	Yes
k. Do substeps below:		
(1) In door 109R, remove lockwire and disconnect 62P-B029B (brown) from J2 on right forward Radio Frequency Transmission Switch SA-2362/ALR-67(V).		
(2) Use figure 1 for length, and do Fault Location (WP020 00) on ALR-67 Coax Cable SW555.		
(3) Does unit under test indicate a fault? .....	g	l
l. Replace ALR-67 Coax Cable SW555 (A1-F18AC-760-300, WP060 00). Do step m. ....	-	-
m. If disconnected, removed or opened during this procedure, make sure items listed are connected, installed or closed:		
(1) 62P-B029A (green) (safety with lockwire)		
(2) 62P-B029B (brown) (safety with lockwire)		
(3) 62P-B029C (blue) (safety with lockwire)		
(4) 62P-B029D (gray) (safety with lockwire)		
(5) 62P-B016A (safety with lockwire)		
(6) 62P-B016B (safety with lockwire)		
(7) Stow Radar Set AN/APG-65 .....	-	-

**Table 4. Left Forward High Band RF Circuit Out Of Tolerance**

Support Equipment Required	
Part Number or Type Designation	Nomenclature
AN/USM-402A(V)1	Swept Frequency Measurement Test Set
Materials Required	
Specification or Part Number	Nomenclature
MS20995NC20	Lockwire
NOTE	
Forward High Band RF Circuit, Figure 1, must be used with this procedure.	
For locator, see WP032 00.	

**Table 4. Left Forward High Band RF Circuit Out Of Tolerance (Continued)**

Malfunction is caused by one of the items below:		
ALR-67 Coax Cable SW528 ALR-67 Coax Cable SW529 ALR-67 Coax Cable SW536 ALR-67 Coax Cable SW537 Left Forward Band Pass Filter F-1539/ALR-67(V) Left Forward Radio Frequency Transmission Switch SA-2362/ALR-67(V)		
Procedure	No	Yes
a. Do substeps below:		
(1) Extend Radar Set AN/APG-65 (A1-F18AC-742-300, WP003 00).		
(2) In door 3, remove lockwire and disconnect 62P-A019A from J1 on left forward Band Pass Filter F-1539/ALR-67(V).		
(3) Use figure 1 for length, and do Fault Location (WP020 00) on weapon replaceable assemblies (WRAs) from 62P-A020 to 62P-A019A.		
(4) Does unit under test indicate a fault? .....	b	i
b. Do substeps below:		
(1) In door 3, remove lockwire and disconnect 62P-A019B from J2 on left forward Band Pass Filter F-1539/ALR-67(V).		
(2) Use figure 1 for length, and do Fault Location (WP020 00) on WRAs from 62P-A019B to 62P-A013D.		
(3) Does unit under test indicate a fault? .....	c	d
c. Replace left forward Band Pass Filter F-1539/ALR-67(V) (A1-F18AC-760-300, WP046 00). Do step m. ....	-	-
d. Do substeps below:		
(1) In door 109L, remove lockwire and disconnect 62P-A030C (blue) from J3 on left forward Radio Frequency Transmission Switch SA-2362/ALR-67(V).		
(2) Use figure 1 for length, and do Fault Location (WP020 00) on ALR-67 Coax Cable SW537.		
(3) Does unit under test indicate a fault? .....	f	e
e. When distance to fault includes connector 62P-A019B or 62P-A030C, inspect connector for damage and replace connector if necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not include connector, replace ALR-67 Coax Cable SW537 (A1-F18AC-760-300, WP059 00). Do step m. ....	-	-

**Table 4. Left Forward High Band RF Circuit Out Of Tolerance (Continued)**

Procedure	No	Yes
f. Do substeps below:		
(1) In door 109L, remove lockwire and disconnect 62P-A030D (gray) from J4 on left forward Radio Frequency Transmission Switch SA-2362/ALR-67(V).		
(2) Use figure 1 for length, and do Fault Location (WP020 00) on ALR-67 Coax Cable SW528.		
(3) Does unit under test indicate a fault? .....	g	h
g. Replace left forward Radio Frequency Transmission Switch SA-2362/ALR-67(V) (A1-F18AC-760-300, WP044 00). Do step m. ....	-	-
h. When distance to fault includes connector 62P-A030D or 62P-B013D, inspect connector for damage and replace connector if necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not include connector, replace ALR-67 Coax Cable SW528 (A1-F18AC-760-300, WP059 00). Do step m. ....	-	-
i. Do substeps below:		
(1) In door 109L, remove lockwire and disconnect 62P-A030A (green) from J1 on left forward Radio Frequency Transmission Switch SA-2362/ALR-67(V).		
(2) Use figure 1 for length, and do Fault Location (WP020 00) on ALR-67 Coax Cable SW536.		
(3) Does unit under test indicate a fault? .....	k	j
j. When distance to fault includes connector 62P-A019A or 62P-A030A, inspect connector for damage and replace connector if necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not include connector, replace ALR-67 Coax Cable SW536 (A1-F18AC-760-300, WP059 00). Do step m. ....	-	-
k. Do substeps below:		
(1) In door 109L, remove lockwire and disconnect 62P-A030B (brown) from J2 on left forward Radio Frequency Transmission Switch SA-2362/ALR-67(V).		
(2) Use figure 1 for length, and do Fault Location (WP020 00) on ALR-67 Coax Cable SW529.		
(3) Does unit under test indicate a fault? .....	g	l
l. When distance to fault includes connector 62P-A030B or 62P-A020, inspect connector for damage and replace connector if necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not include connector, replace ALR-67 Coax Cable SW529 (A1-F18AC-760-300, WP059 00). Do step m. ....	-	-
m. If disconnected, removed or opened during this procedure, make sure items listed are connected, installed or closed:		
(1) 62P-A030A (green) (safety with lockwire)		

**Table 4. Left Forward High Band RF Circuit Out Of Tolerance (Continued)**

Procedure	No	Yes
(2) 62P-A030B (brown) (safety with lockwire)		
(3) 62P-A030C (blue) (safety with lockwire)		
(4) 62P-A030D (gray) (safety with lockwire)		
(5) 62P-A019A (safety with lockwire)		
(6) 62P-A019B (safety with lockwire)		
(7) Stow Radar Set AN/APG-65 .....	-	-

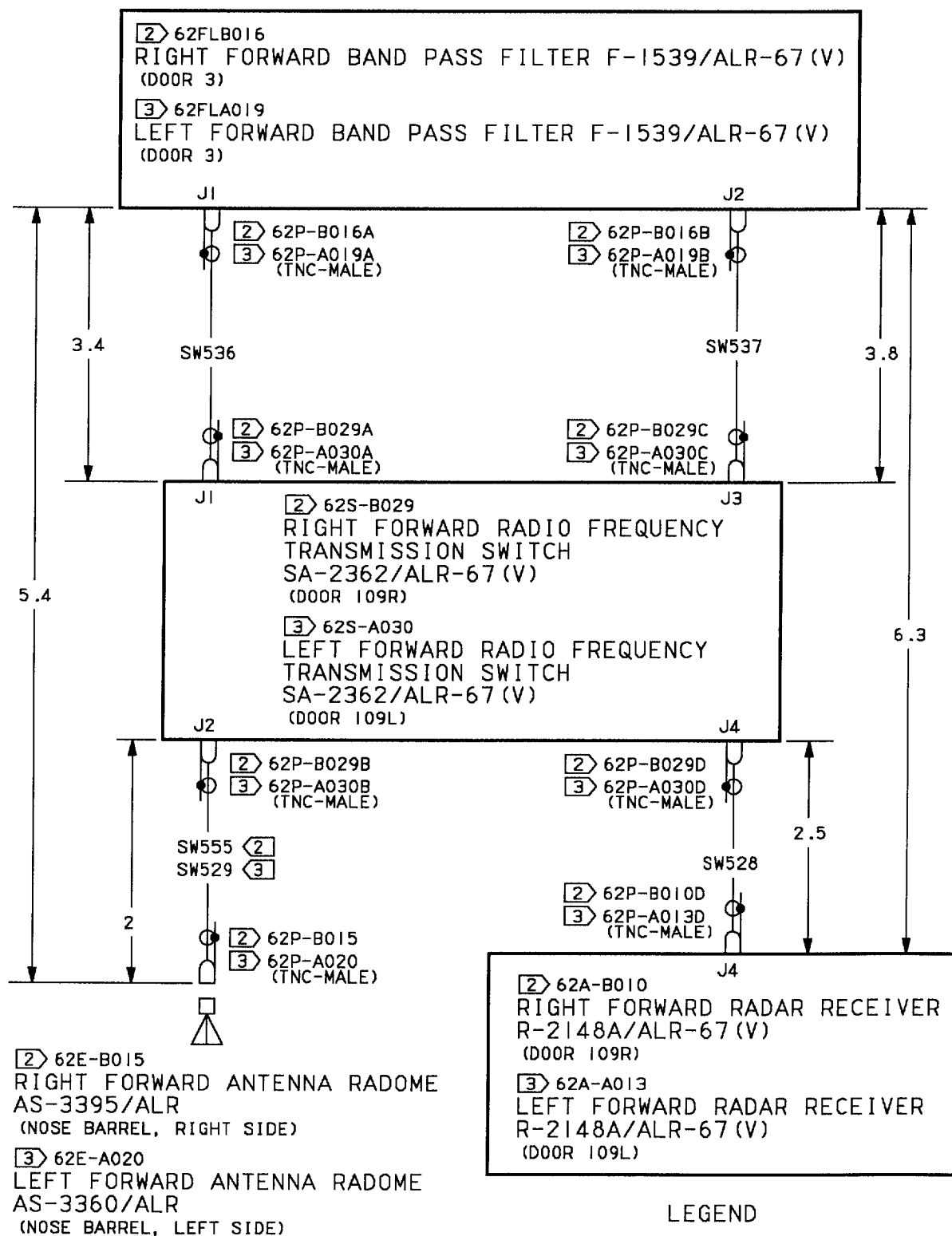


Figure 1. Forward High Band RF Circuits

**THIS PAGE INTENTIONALLY LEFT BLANK.**

**ORGANIZATIONAL MAINTENANCE**  
**TESTING AND TROUBLESHOOTING**  
**TESTING - LOW BAND RF LINE INSERTION LOSS**  
**COUNTERMEASURES WARNING AND CONTROL SYSTEM**  
**EFFECTIVITY: 161702 AND UP**

**This WP is incomplete without WP020 00 contained in Confidential Supplement A1-F18AC-760-210/(C).**

### Reference Material

Line Maintenance Procedure .....	A1-F18AC-LMM-000
Line Maintenance Access Doors .....	A1-F18AC-LMM-010
Tactical Electronic Warfare Systems .....	A1-F18AC-760-200
Line/Antenna Return Loss and Insertion Loss .....	WP020 00
Tactical Electronic Warfare Systems .....	A1-F18AC-760-210/(C)
Line/Antenna Return Loss and Insertion Loss .....	WP020 00
Tactical Electronic Warfare Systems .....	A1-F18AC-760-300
Radar Receiver R-2055A/ALR-67(V) .....	WP054 00

### Alphabetical Index

Subject	Page No.
Low Band BIT and OMNI RF Circuits, Figure 1 .....	8
Table 1. Low Band BIT RF Line Insertion Loss .....	1
Table 2. Low Band OMNI RF Line Insertion Loss .....	3
Table 3. Low Band BIT RF Circuit Out of Tolerance .....	6
Table 4. Low Band OMNI RF Circuit Out of Tolerance .....	7

### Record of Applicable Technical Directives

None

**Table 1. Low Band BIT RF Line Insertion Loss**

Procedure	Normal Indication	Remedy for Abnormal Indication
<b>System Required Components</b>		
ALR-67 Coax Cable SW526A installed. ALR-67 Coax Cable SW526B installed.		
<b>Support Equipment Required</b>		
None		
<b>Materials Required</b>		
None		

**Table 1. Low Band BIT RF Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>NOTE</b></p> <p>For locator, refer to WP032 00.</p>		
<p>1. PRELIMINARY.</p> <p>a. Make sure electrical power is off (A1-F18AC-LMM-000).</p> <p>b. Open door 3 (A1-F18AC-LMM-010).</p> <p>c. Disconnect 62P-B014C from J3 on Integrated Antenna AS-3190A/ALR-67(V).</p> <p>d. Remove Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).</p>		
<p align="center"><b>NOTE</b></p> <p>Sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00). Use frequency range F5.</p>		
<p>e. Do Initial Setup (WP020 00).</p> <p>2. INSERTION LOSS TEST.</p> <p>a. Do Insertion Loss Setup (WP020 00). Use 7mm to TNC female adapter on directional coupler (channel R) and 7mm to TNC male adapter on directional coupler (channel B).</p> <p>b. Do Recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches to 2.7.</p> <p>c. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.</p> <p>d. In door 14L, connect 62P-E009F to directional coupler (channel R).</p> <p>e. In door 3, connect 62P-B014C to directional coupler (channel B).</p>		



**Table 1. Low Band BIT RF Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>NOTE</b></p> <p align="center">Note frequency where insertion loss limit is exceeded. This frequency is <math>F_0</math>, used in fault location.</p>		
<p>f. Do Measurement Recording (WP020 00).</p> <p>3. FINAL.</p> <p>a. If this is last test, do Shutdown (WP020 00).</p> <p>b. Connect 62P-B014C to J3 on Integrated Antenna AS-3190A/ALR-67(V).</p>	<p>Insertion loss measurement is not greater than 2.7 dB for frequency range F5.</p>	<p>Do table 3.</p>
<p align="center"><b>NOTE</b></p> <p align="center">If table 2 is to be done next, omit step c and step d.</p>		
<p>c. Close door 3 (A1-F18AC-LMM-010).</p> <p>d. Install Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).</p>		

**Table 2. Low Band OMNI RF Line Insertion Loss**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>System Required Components</b></p> <p align="center">ALR-67 Coax Cable SW527A installed. ALR-67 Coax Cable SW527B installed.</p> <p align="center"><b>Support Equipment Required</b></p> <p align="center">None</p> <p align="center"><b>Materials Required</b></p> <p align="center">None</p>		

**Table 2. Low Band OMNI RF Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p style="text-align: center;"><b>NOTE</b></p> <p>For locator, refer to WP032 00.</p>		
<p>1. PRELIMINARY.</p> <p>a. Make sure electrical power is off (A1-F18AC-LMM-000).</p> <p>b. Open door 3 (A1-F18AC-LMM-010).</p> <p>c. Disconnect 62P-B014B from J2 on Integrated Antenna AS-3190A/ALR-67(V).</p> <p>d. Remove Radar Receiver R-2056A/ALR-67(V) (A1-F18AC-760-300, WP054 00).</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p>Sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00). Use frequency range F4.</p> <p>When connecting directional couplers, use 100 MHz through 1 GHz Frequency Sweep Initial Setup.</p>		
<p>e. Do Initial Setup (WP020 00).</p> <p>2. INSERTION LOSS TEST.</p> <p>a. Do Insertion Loss Setup (WP020 00).</p> <p>b. Do Recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches to 2.9.</p> <p>c. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.</p> <p>d. In door 14L, connect 62P-E009E to directional coupler (channel R).</p> <p>e. In door 3, connect 62P-B014B to directional coupler (channel B).</p>		

**Table 2. Low Band OMNI RF Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
<p align="center"><b>NOTE</b></p> <p align="center">Note frequency where insertion loss limit is exceeded. This frequency is <math>F_0</math>, used in fault location.</p>		
<p>f. Do Measurement Recording (WP020 00).</p> <p>g. Disconnect 62P-E009E from directional coupler (channel R).</p> <p>h. Disconnect 62P-B014B from directional coupler (channel B).</p>	<p>Insertion loss measurement is not greater than 2.9 dB for frequency range F4.</p>	<p>Do table 4.</p>
<p align="center"><b>NOTE</b></p> <p align="center">Sweep frequencies are listed in Countermeasures Warning and Control System Sweep Frequencies, table 2 (A1-F18AC-760-210/(C), WP020 00). Use frequency range F1.</p> <p align="center">When connecting USM-402 components, use 1 GHz through 18 GHz Frequency Sweep Insertion Loss Setup.</p>		
<p>i. Do Insertion Loss Setup (WP020 00). Use 7mm to TNC female adapter on directional coupler (channel R) and 7mm to TNC male adapter on directional coupler (channel B).</p> <p>j. Do Recorder Reference Line Recording (WP020 00) for insertion loss. Set OFFSET dB thumbwheel switches to 3.4.</p> <p>k. Replace 7mm to TNC male adapter on directional coupler (channel B) with 7mm to TNC female adapter.</p> <p>l. In door 14L, connect 62P-E009E to directional coupler (channel R).</p> <p>m. In door 3 connect 62P-B014B to directional coupler (channel B).</p>		
<p align="center"><b>NOTE</b></p> <p align="center">Note frequency where insertion loss limit is exceeded. This frequency is <math>F_0</math>, used in fault location.</p>		
<p>n. Do Measurement Recording (WP020 00).</p>	<p>Insertion loss measurement is not greater than 3.4 dB for frequency range F1.</p>	<p>Do table 4.</p>

**Table 2. Low Band OMNI RF Line Insertion Loss (Continued)**

Procedure	Normal Indication	Remedy for Abnormal Indication
3. FINAL.  a. If this is last test, do Shutdown (WP020 00).  b. In door 3, connect 62P-B014B to J2 on Integrated Antenna AS-3190A/ALR-67(V).  c. Close door 3 (A1-F18AC-LMM-010).  d. Install Radar Receiver R-2055A/ALR-67(V) (A1-F18AC-760-300, WP054 00).		

**Table 3. Low Band BIT RF Circuit Out of Tolerance**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
AN/USM-402A(V)1	Swept Frequency Measurement Test Set	
Materials Required		
None		
NOTE		
Low Band BIT and OMNI RF Circuits, Figure 1 must be used with this procedure.		
For locator, see WP032 00.		
Malfunction is caused by one of the below:		
ALR-67 Coax Cable SW526A		
ALR-67 Coax Cable SW526B		
Procedure	No	Yes
a. Do substeps below:		
(1) Use figure 1 for length, and do Fault Location (WP020 00) on ALR-67 Coax Cable SW526A and ALR-67 Coax Cable SW526B.		
(2) Does ALR-67 Coax Cable SW526A indicate a fault? .....	c	b

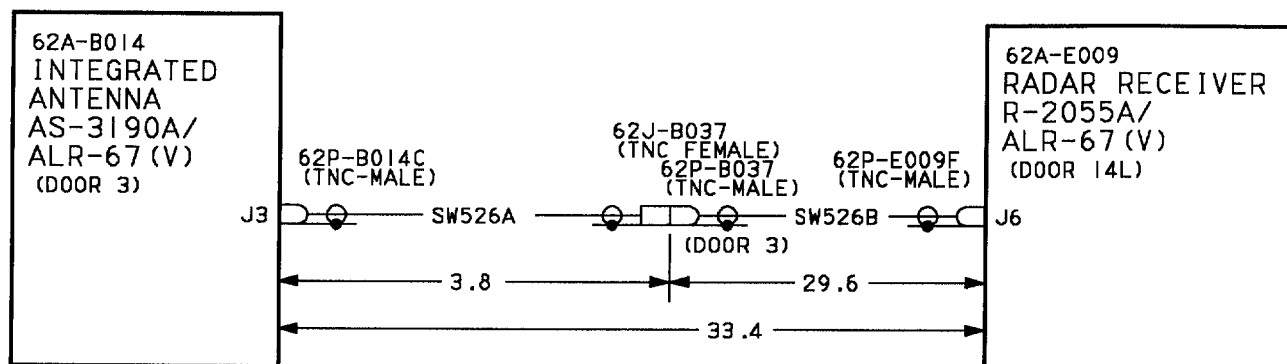
**Table 3. Low Band BIT RF Circuit Out of Tolerance**

Procedure	No	Yes
b. When distance to fault includes connector 62P-B014C or 62J-B037, inspect connector for damage and replace connector if necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not include connector, replace ALR-67 Coax Cable SW526A (A1-F18AC-760-300, WP062 00). . . . .	-	-
c. When distance to fault includes connector 62P-E009F or 62P-B037, inspect connector for damage and replace connector if necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not include connector, replace ALR-67 Coax Cable SW526B (A1-F18AC-760-300, WP062 00). . . . .	-	-

**Table 4. Low Band OMNI RF Circuit Out of Tolerance**

Support Equipment Required		
Part Number or Type Designation	Nomenclature	
AN/USM-402A(V)1	Swept Frequency Measurement Test Set	
Materials Required		
None		
NOTE		
Low Band BIT and OMNI RF Circuits, Figure 1, must be used with this procedure.		
For locator, see WP032 00.		
Malfunction is caused by one of the below:		
ALR-67 Coax Cable SW527A		
ALR-67 Coax Cable SW527B		
Procedure	No	Yes
a. Do substeps below:		
(1) Use figure 1 for length, and do Fault Location (WP020 00) on ALR-67 Coax Cable SW527A and ALR-67 Coax Cable SW527B.		
(2) Does ALR-67 Coax Cable SW527A indicate a fault? .....	c	b
b. When distance to fault includes connector 62P-B014B or 62J-B038, inspect connector for damage and replace connector if necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not include connector, replace ALR-67 Coax Cable SW527A (A1-F18AC-760-300, WP062 00). .....	-	-
c. When distance to fault includes connector 62P-E009E or 62P-B038, inspect connector for damage and replace connector if necessary (A1-F18AC-WRM-000, WP137 00). When distance to fault does not include connector, replace ALR-67 Coax Cable SW527B (A1-F18AC-760-300, WP062 00). .....	-	-

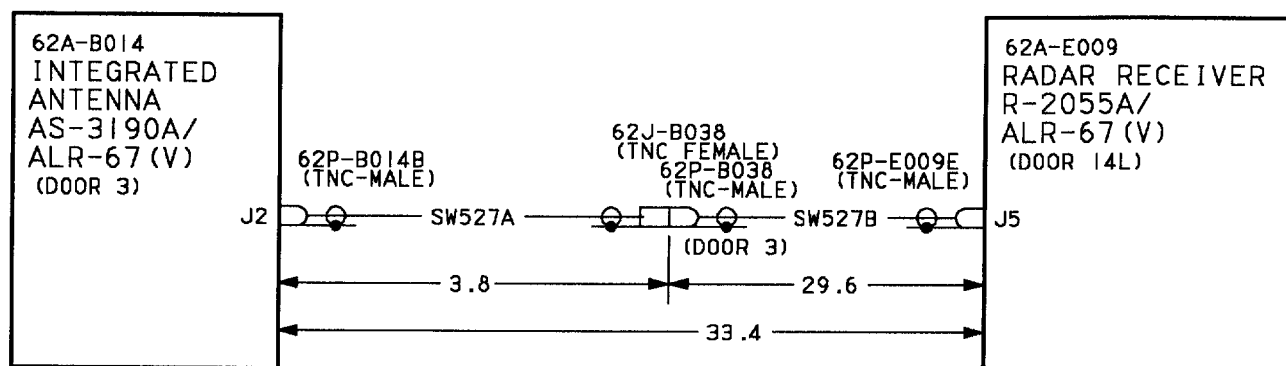
## LOW BAND BIT RF



## LEGEND

1. ALL COAX LENGTHS ARE IN FEET.

## LOW BAND OMNI RF



## LEGEND

1. ALL COAX LENGTHS ARE IN FEET.

Figure 1. Low Band BIT and OMNI RF Circuits